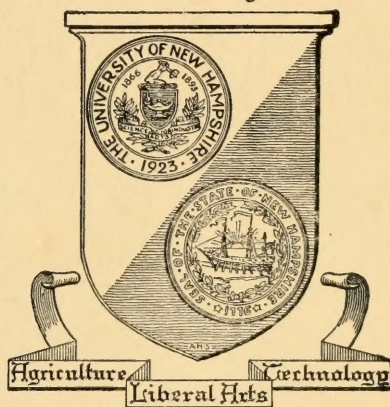


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STATE
OF
NEW HAMPSHIRE.

ANNUAL REPORTS,

1892.

VOL. II.

CONCORD:
IRA C. EVANS, PUBLIC PRINTER.
1893.

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REPORT

OF THE

STATE TREASURER

OF THE

STATE OF NEW HAMPSHIRE

FOR THE YEAR ENDING

MAY 31, 1892.

VOLUME I. . . . PART 3.

CONCORD:

IRA C. EVANS, PUBLIC PRINTER.

1892.

REPORT

OFFICE OF STATE TREASURER,

CONCORD, June 1, 1892.

To the Honorable Senate and House of Representatives:

GENTLEMEN, — I have the honor to submit the following report, exhibiting the transactions of this department for the fiscal year ending May 31, 1892.

ABSTRACT OF RECEIPTS AND DISBURSEMENTS.

RECEIPTS.

Cash on hand June 1, 1891	\$311,819.08
Total receipts during the	
year	1,879,165.48
	<hr/>
	\$2,190,984.56

DISBURSEMENTS.

Total disbursements during	
the year	\$1,845,765.45
Cash on hand June 1, 1892	345,219.11
	<hr/>
	\$2,190,984.56

DEBT.

Liabilities June 1, 1891	. \$2,579,376.39
Assets June 1, 1891 . . .	319,335.75
	<hr/>
Net indebtedness June 1, 1891	. \$2,260,040.64
<i>Amount carried forward</i>	. \$2,260,040.64

<i>Amount brought forward</i>	.	.	\$2,260,040.64
Liabilities June 1, 1892	.	\$2,859,033.86	
Assets June 1, 1892	.	707,129.97	
		<hr/>	
Net indebtedness June 1, 1892	.	\$2,151,903.89	
		<hr/>	
Reduction of debt during the year	.	\$108,136.75	

REVENUE AND EXPENSES.

The following statement exhibits the sources of the revenue and the nature of the expenses for the year 1891-92.

REVENUE.

State tax	.	.	.	\$500,000.00
Railroad tax	.	.	.	122,583.23
Insurance tax	.	.	.	14,618.19
Interest on deposits	.	.	.	5,061.07
License fees (peddlers)	.	.	.	1,050.00
License fees (fertilizers)	.	.	.	1,050.00
Telegraph tax	.	.	.	2,697.33
Telephone tax	.	.	.	2,109.06
Charter fees	.	.	.	510.00
Fees (insurance department)				6,529.60
Sale of old fence, library lot				40.00
Sale of sheets (1,200 sets)				
Public Statutes	.	.	.	1,272.00
Premium on Library loan				
bonds	.	.	.	19,075.00
Board of registration dent-				
istry fees	.	.	.	89.50
				<hr/>
<i>Amount carried forward</i>				\$676,684.98

<i>Amount brought forward</i>	\$676,684.98
Benjamin Thompson estate, profit and loss	9.81
Benjamin Thompson estate, income 2 years to January 30, 1892	38,547.50
Total revenue	\$715,242.29

EXPENSES.

Ordinary expenses	\$220,628.91
Extraordinary expenses	203,629.49
Interest	182,847.14
Total expenses	\$607,105.54
Excess of revenue over expenses*	\$108,136.75

For convenience, expenses are divided into two classes, ordinary and extraordinary. Ordinary expenses include salaries and expenses whose payment is authorized by general laws, and which are of annual or biennial occurrence. During the past year they have been as follows, viz. :

ORDINARY EXPENSES.

Salaries	\$60,985.67
Honorable Council	2,283.20
State printing	26,485.95
Auditing printer's accounts	286.00
Increase state library	3,037.02
Trustees of normal school (expenses)	260.48
Trustees state library (expenses)	14.90
<i>Amount carried forward</i>	\$93,353.22

* Corresponding with reduction of debt, page 166.

<i>Amount brought forward</i>	.	.	\$93,353.22
Clerks of supreme court	.	.	834.20
Support of indigent insane	.	.	6,000.00
Support of convict insane	.	.	4,499.97
Commissioners of lunacy	.	.	13,441.05
N. H. National Guard	.	.	29,998.17
Bounty on wild animals, etc.	.	.	1,101.00
Fish commissioners	.	.	3,133.30
State house	.	.	4,061.42
Agricultural college	.	.	3,000.00
Clerical expenses, treasury	.	.	1,000.00
Industrial school	.	.	6,000.00
Board of agriculture	.	.	1,194.13
Board of equalization	.	.	285.06
Independent militia	.	.	400.00
Auditing treasurer's accounts	.	.	200.00
Board of health	.	.	586.88
Bank commissioners	.	.	7,890.62
Clerk, adjutant-general's department	.	.	500.00
Clerk, superintendent public instruction	.	.	500.00
Clerk, board of health	.	.	500.00
Clerk, insurance department	.	.	625.00
Deaf and dumb (education of)	.	.	3,343.35
Blind (education of)	.	.	2,861.45
Idiotic and feeble-minded youth	.	.	1,564.60
Normal school (current expenses)	.	.	7,000.00
Advertising, other than laws	.	.	110.58
Compiling financial statistics	.	.	200.00
N. H. Reports (vol. 65)	.	.	1,050.00
Expenses insurance commissioner	.	.	135.00
Contagious diseases (cattle)	.	.	6,631.53
Damages to sheep, etc., by dogs	.	.	897.35
<i>Amount carried forward</i>	.	.	\$202,897.88

<i>Amount brought forward</i>	.	.	\$202,897.88
Governor's contingent fund	.	.	454.84
Publishing laws	.	.	4,613.63
Commissioner of immigration	.	.	5,638.80
Insurance commissioner's office	.	.	663.09
Commissioners of pharmacy	.	.	379.50
Granite State Dairymen's Association	.	.	500.00
New Hampshire Historical Society	.	.	500.00
Board of registration (dentistry)	.	.	72.82
Asylum library (three years' appropriation)	.	.	300.00
Library commission	.	.	60.61
Incidentals	.	.	4,547.74
			<hr/>
Total ordinary expenses	.	.	\$220,628.91

Extraordinary expenses are those which are authorized by special acts of the Legislature. For the past year they have been as follows, viz. :

EXTRAORDINARY EXPENSES.

Abatement of state tax, 1891	.	.	\$115.63
Prisoners' Aid Association	.	.	21.00
White mountain roads	.	.	6,981.44
State prison (balance current expenses)	.	.	2,050.20
State prison, repairs	.	.	5,971.23
Indexing records (secretary)	.	.	1,292.50
Prison library	.	.	285.90
Historian	.	.	634.45
Normal school (special appropriation)	.	.	24,363.11
Publication military records	.	.	2,963.55
Boundary survey (Mass.)	.	.	4,530.46
Regimental histories	.	.	2,610.00
			<hr/>
<i>Amount carried forward</i>	.	.	\$51,819.47

<i>Amount brought forward</i>	.	.	\$51,819.47
Colebrook hatching-house	.	.	729.45
Laconia hatching-house	.	.	24.00
Bristol hatching-house	.	.	53.35
Cheshire County hatching-house	.	.	148.96
Ashland hatching-house	.	.	60.00
Soldiers' Home (net)	.	.	8,621.45
Legislative resolves	.	.	626.50
Lighting Weirs channel	.	.	468.15
Morrison's Digest	.	.	3,239.55
General Stark's portrait	.	.	132.10
Game detectives	.	.	214.10
Plans state library	.	.	420.00
Forestry commission	.	.	12.75
Normal school (apparatus)	.	.	5,000.00
Normal school (flag)	.	.	200.00
Ray & Walker's citations	.	.	3,625.00
Endicott Rock (preservation of)	.	.	824.90
New Hampshire Asylum (special appropriation)	.	.	6,300.00
State library (building)	.	.	78,421.98
Industrial school (special appropriation)	.	.	4,000.00
War album	.	.	100.00
Sunapee lake lights and buoys	.	.	397.08
Gettysburg monuments	.	.	1,000.00
Removal Agricultural college	.	.	25,000.00
Printing bonds	.	.	299.00
Chicago exposition	.	.	891.70
Bennington monument (dedication of)	.	.	3,500.00
Benjamin Thompson state trust fund appropriations, January 30, 1891 and January 30, 1892	.	.	6,000.00
Matthew Thornton monument	.	.	1,000.00
New Hampshire Historical Society (special appropriation)	.	.	500.00
Total extraordinary expenses	.	.	<u>\$203,629.49</u>

INTEREST.

There have been paid on account of interest the past year, or credited to the several trust funds, the following amounts, viz. :

Surplus revenue	\$60.57	
Fisk legacy	1,582.70	
Kimball legacy	405.21	
Agricultural college fund . .	4,800.00	
Teachers' institute fund . .	3,248.00	
Coupons on bonds and interest on registered bonds	141,309.00	
Interest on state notes . .	1,388.88	
Interest on Benjamin Thompson trust fund	29,687.98	
Interest on Benjamin Thompson state trust fund . .	364.80	
	<hr/>	
Total interest charges		\$182,847.14

The following has been received, viz. :

Interest on deposits	\$5,061.07	
Income Benjamin Thompson estate (2 years)	38,547.50	
	<hr/>	\$43,608.57
		<hr/>
Net interest		\$139,238.57

PRINCIPAL OF STATE DEBT.

There have been paid during the year :

State bonds, series 1872	\$197,000.00
State bonds, series 1879	100,000.00
State note (temporary loan)	100,000.00
	<hr/>
	\$397,000.00

TRUST FUNDS.

Trust funds are now as follows, viz. :

Fisk legacy	\$26,378.43
Kimball legacy	6,753.49
Surplus revenue	1,009.44
Teachers' institute fund	55,121.00
Interest on surplus revenue	2,159.89
Agricultural college fund	80,000.00
Unclaimed savings-bank deposits	1,604.68
Benjamin Thompson trust fund	393,511.30
Benjamin Thompson state trust fund	6,364.80
	<hr/>
Total trust funds	\$572,903.03

LITERARY FUND.

Receipts.

Balance June 1, 1891 . . .	\$812.98
Non-resident savings-bank tax	74,436.29
	<hr/>
	\$75,249.27

Disbursements.

Dividend to towns, of one dollar and twenty-five cents per scholar, as per table in appendix (pages 254-261) .	\$75,243.75
Balance to credit of the fund	5.52
	<hr/>
	\$75,249.27

TEACHERS' INSTITUTE FUND.

Balance June 1, 1891 . . .	\$54,133.33
One year's interest at 6 per cent	3,248.00
	<hr/>
Expenses of institutes 1891-92 . . .	2,260.33
	<hr/>
Balance June 1, 1892 . . .	\$55,121.00

UNCLAIMED SAVINGS-BANK DEPOSITS.

Balance in treasury June 1, 1891 . . .	\$885.89
Received of Edgar H. Woodman and Samuel F. Brown, assignees of Pen- cook Savings Bank	256.11
Received of John E. Robertson assignee of Concord Savings Bank	648.81
	<hr/>
	\$1,790.81
Paid during the year	186.13
	<hr/>
Balance in treasury June 1, 1892 . . .	\$1,604.68

This amount is subject to the demand of the depositors, in accordance with the provisions of section 22, chapter 162, of the Public Statutes, and is reported in Trust Funds (page 172).

RAILROAD TAXES.

I reported June 1, 1891, that I had been unable to obtain sufficient data upon which to apportion to the towns on the line of the Manchester & Keene Railroad their proportion of the tax on said road for the year 1890.

The information has not yet been furnished, although I have exhausted all means at my command to obtain it.

The same conditions exist in regard to the Whitefield & Jefferson Railroad, taxed for the first time in 1891.

There remains in the treasury June 1, 1892, the following sums, due the towns situated on the line of the two above named roads :

Manchester & Keene, account tax of 1890	\$396.00
Manchester & Keene, account tax of 1891	349.65
	<hr/>
	\$745.65
Whitefield & Jefferson account tax of 1891 . . .	434.75
	<hr/>
Total	\$1,180.40

See statement of liabilities (page 241).

BUILDING AND LOAN ASSOCIATIONS.

The Legislature in 1889 (see chapter 12, Pamphlet Laws of 1889) provided for the taxation of Building and Loan Associations, but failed to direct when or to whom the tax should be paid, or what disposition should be made of the same. Some of the associations were taxed by the local boards of assessors.

The Laconia Building and Loan Association paid to the state treasurer a tax of two hundred and fifty dollars and forty-three cents (\$250.43), which is held pending further legislation. See statement of liabilities (page 241).

SOLDIERS' HOME.

I reported June 1, 1891, in the liabilities of the State the sum of seven hundred and fifty-eight dollars and thirty-three cents (\$758.33), the same having been received from the United States on account of allowance for the support of the inmates of the Soldiers' Home for the quarter ending March 31, 1891.

The following sums have been received from the same source from June 1, 1891, to date:

Quarter ending June 30, 1891 (in part) .	\$43.89
Quarter ending September 30, 1891 .	925.00
Quarter ending December 31, 1891 .	1,025.00
Quarter ending March 31, 1892 . .	1,400.00
	<hr/>
Total receipts during year . . .	\$3,393.89
Received during previous year . . .	758.33
Balance due from United States for quarter ending June 30, 1891 . . .	956.11
	<hr/>
	\$5,108.33

The above amount is specifically appropriated by section 2, chapter 20, Pamphlet Laws of 1891, for the

support of the Soldiers' Home, consequently is not included in the revenue account.

The balance due from the United States is reported in the assets of the State (see page 242).

The expenditures on account of the home for the current fiscal year have been .	\$13,729.78
Deduct allowance received and due from the United States	5,108.33
Net expense for current fiscal year .	<u>\$8,621.45</u>

TAXES AND ASSESSMENTS.

I take pleasure in reporting the collection of every cent of the state tax assessed for the year 1891, and also all arrearages for previous years.

The assessments made by the State Board of Equalization upon the railroad, telegraph and telephone corporations have all been promptly paid, and the same may be said of the saving-bank taxes and the taxes on insurance companies, both home and foreign.

THE BENJAMIN THOMPSON TRUST FUND.

Benjamin Thompson, late of Durham, N. H., died January 30, 1890.

His last will and testament, bequeathed all his estate, real and personal, after certain legacies were paid, to the State of New Hampshire, subject to certain conditions and limitations.

The Legislature of 1891, passed an act entitled, "An act to accept the provisions of the Thompson will, and to provide for the present disposition of the funds."

Section 14 of said act authorized the governor and council in behalf of the State to "enter into such further stipulations with the executors of said will and to give

such further guarantees as the executors shall require, etc."

On the fourteenth day of September, 1891, the governor and council executed a contract between the State of New Hampshire and the executors of the last will of Benjamin Thompson; and on the twenty-second day of September, 1891, the executors transferred the estate to the state treasurer, and the same became the property of the State subject to the conditions expressed in the will, and the act of the Legislature accepting the same.

The act of the Legislature directs the state treasurer, on receipt of the estate from the executors, to open an account with the Benjamin Thompson trust fund under date of January 30, 1891 (one year from the date of Benjamin Thompson's death).

This has been done, but as the estate was not received by the state treasurer until September 22, 1891, no reference was made to the matter in the treasurer's report for the fiscal year ending May 31, 1891. The present report covers the transactions for the first two years of the twenty years term of the trust, to wit: from January 30, 1890 (the date of the testator's death), to January 30, 1892.

In order to render this important transaction intelligible to the public, and to place the official documents connected with it, in convenient form for reference, I preface the statement of the present condition of the Benjamin Thompson fund, and the Benjamin Thompson state trust fund, with copies of the important official documents pertaining to the case, to wit:

1. Copy of Benjamin Thompson's will with certificate of register of probate attached thereto.
2. Copy of probate records.
 - (a) Appointment of executors.

(b) Appointment of appraisers.

(c) Inventory and appraisement with certificates of appraisers and executors.

(d) Settlement of executors, in probate court, with register's certificate attached thereto.

3. Chapter 12, Pamphlet Laws, 1891, entitled "An act to accept the provisions of the Thompson will, etc."

4. Contract between the State of New Hampshire and the executors, etc.

5. Receipt given to executors.

CERTIFICATE OF REGISTER OF PROBATE.

STATE OF NEW HAMPSHIRE.

STRAFFORD, SS.

PROBATE OFFICE.

I, Charles S. Clifford, register of the probate court for said county of Strafford, having by law the custody of the seal and all the records, books, documents, and papers of or appertaining to said court, hereby certify the paper hereto annexed to be a true copy of a paper appertaining to said court, and on file and of record in the office of said court, viz. :

The last will and testament, and three codicils thereto, of BENJAMIN THOMPSON, late of Durham, in said county, deceased.

In witness whereof I have hereunto set my hand and
[L. S.] the seal of said court this 26th day of February, in the
year of our Lord one thousand eight hundred and ninety.

(Signed) CHARLES S. CLIFFORD,

Register.

BENJAMIN THOMPSON'S WILL.

IN THE NAME OF GOD, AMEN.

I, BENJAMIN THOMPSON, of Durham, in the county of Strafford and State of New Hampshire, farmer, being in good health, and of a sound and perfect mind and memory, but aware of the uncertainty of this life, do make, publish, and declare this my last will and testament, and herein dispose of all my worldly estate in manner following, to wit :

1st. I order and direct my executors herein named, to pay all my just debts and funeral charges as soon as may be after my decease.

2d. I give, devise, and bequeath all my estate, real, personal and mixed, of which I may die seized and possessed, wherever situate, to my native State of New Hampshire forever, in trust, subject, however, to the provisos, conditions, and limitations hereinafter mentioned and expressed concerning the same.

The object of this devise being to promote the cause of agriculture, by establishing at the expiration of twenty years from the time of my decease an agricultural school, to be located on my Warner farm, so called, and situated in said Durham; wherein shall be thoroughly taught, both in the school-room and in the field, the theory and practice of that most useful and honorable calling. The said State is to have and to hold the estate above devised, upon the express condition that said State shall guarantee a net annual compound interest of five per cent upon the amount of the appraised value thereof for the term of twenty years; after which time the whole amount of principal and interest thus compounded is to constitute a fund, the principal of which said State shall guarantee forever to preserve; and the net annual income thereof is to be expended for maintaining and continuing said school and improving said farm and other lands herein devised situate in said Durham.

Believing that said fund will be insufficient to erect the necessary buildings and furnish the same, to stock said farm, procure the needful apparatus, to commence a library, and to sustain said school usefully and honorably; and believing that such an institution rightfully conducted and sustained would confer honor on the whole State, and greatly advance and improve its agriculture, the leading interest of the State; and knowing no better way of arousing the attention of the citizens of said State to the necessity of acquiring such knowledge in this country and in Europe, as may be useful for rightly managing said school, — I propose and make it a condition of this bequest that said State of New Hampshire shall raise and appropriate, by law, annually, for the term of twenty years, the sum of three thousand dollars, which would be less than one cent a year for each inhabitant of the State; and also upon the further condition that said State shall guarantee a net annual compound interest of five per cent on the twenty sums of three thousand dollars each, thus required to be raised; and at the expiration of twenty years from the time of my decease the principal and interest thus compounded is to constitute a fund,

out of which the amount necessary to erect suitable buildings, and to furnish the same, to stock said farm, procure apparatus, and commence a library, shall be expended; and the interest of the State fund thus reduced, and net annual income of the fund constituted according to the express terms and conditions of the bequest which I have hereinbefore made, shall be expended under the direction and supervision of said State, for the purpose of maintaining and continuing said school, and improving said farm and all other lands situate in said Durham; and as the fund last named is partly composed of my real estate, — my meaning is, that the net annual income of all my real estate herein bequeathed is also to be expended at the same time, in the same manner, and for the same purpose above set forth; and it is made a further condition of this bequest, that no part of said Warner farm and other lands herein devised, situate in said Durham, shall ever be sold, conveyed, leased, or alienated by said State of New Hampshire, or diverted from the purpose above set forth, of establishing, endowing, and continuing said state agricultural school.

If the State of New Hampshire does not accept said trust upon the terms and conditions herein set forth, within two years from the time of my decease, or accepting the same, shall fail to comply with the terms and conditions thereof, then, and in such case, this devise to said State shall become and be null and void.

3d. If the State of New Hampshire does not accept said trust upon the conditions herein set forth, within two years from the time of my decease, or if the foregoing devise to said State shall become null and void by reason of the failure of said State to comply with the terms and conditions thereof, then, and in such case, I give, devise, and bequeath all of my said estate to the State of Massachusetts, upon the same terms and conditions as herein required of the State of New Hampshire; excepting that forbidding the sale of my land in Durham, and requiring said school to be located in said Durham, and limiting the time of accepting said trust to two years from the time of my decease; the said State of Massachusetts being at liberty to sell all my lands and to locate the school wherever its legislature shall deem it most for the advantage of said State of Massachusetts; and said State of Massachusetts may have four years from the time of my decease, within which to accept said trust upon the terms and conditions herein set forth thus modified.

4th. If the State which accepts the trust upon the conditions herein set forth should desire to establish said school at any time before the expiration of twenty years from the time of my decease, then, and in such case, my will is that said State may thus do, provided said State shall, before using any of either of the funds herein set forth, raise and set apart such sums of money as will make said funds equal in amount to what said funds would become, if accumulated during twenty years according to the terms and conditions herein set forth.

I hope that the citizens of my native town and county, and of the county of Rockingham, will manifest such liberality as will induce my native State to accept said trust upon the conditions herein set forth.

It might seem presumptuous in me to attempt to devise any plan for the ordering and management of such an institution as is contemplated by this will, and which will probably go into operation at a time so remote, when doubtless there will be great advancement in the knowledge of agriculture; so I leave this duty to the wisdom of the State, through its legislature, only claiming to make the suggestions following: Morality, order, industry, and economy should be constantly taught and practiced by all the teachers and by all the scholars. Teachers, scholars, and laborers should be required to meet each morning in the chapel for the reading of the Scriptures and for prayer.

No scholar should be admitted to the school under sixteen years of age.

Every scholar should be required to labor on the land four hours of each working day, when practicable.

Horticulture should receive its due share of attention.

The chemistry of agriculture, and physiology, and other sciences, so far as they are connected with agriculture, should be taught; but no professor should be selected unless he is also distinguished for his knowledge of scientific and practical agriculture.

The theories taught should, as far as practicable, be tested by experiments on the farm; and all experiments, together with the cost and results thereof, should be published and sold to the citizens of the State and of the United States, at the cost of publication.

There should be one vacation each year from December first to April first.

I would also suggest the propriety of applying to the Congress of the United States for a grant of land in aid of this object; and in

other ways to seek contributions to promote the usefulness and extend the advantages of said school; and I believe that when the vast benefit to be derived from such teaching shall be practically demonstrated, similar schools will be multiplied in every State of this great confederacy, their unbounded agricultural resources will be developed, the national wealth and power increased, the happiness of man, the honor of God, and the love of Christ promoted, and the way be in some degree prepared for the time when "He shall judge the nations and shall rebuke many people, and they shall beat their swords into ploughshares and their spears into pruning hooks; nation shall not lift up sword against nation, neither shall they learn war any more."

Lastly. I do hereby nominate and appoint William P. Ffrost and Stephen Demeritt of said Durham, and John S. Woodman and Henry W. Pickering of the city of Boston and State of Massachusetts, executors of this my last will and testament, hereby revoking all former wills by me made.

In witness whereof I have hereunto set my hand and seal this twelfth day of February, in the year of our Lord one thousand eight hundred and fifty-six.

(Signed) BENJAMIN THOMPSON. [L. s.]

Signed, sealed, published, and declared by the said Benjamin Thompson, as and for his last will and testament, in presence of us, who, at his request, in his presence and in the presence of each other, have subscribed our names as witnesses thereto.

(Signed) J. A. RICHARDSON.

J. F. SMITH.

JOS. W. COE.

CODICIL.

WHEREAS, I, Benjamin Thompson, of the town of Durham, in the State of New Hampshire, having made and duly executed my last will and testament in writing and bearing date the twelfth (12th) day of February, in the year of our Lord one thousand eight hundred and fifty-six.

AND WHEREAS, Since the date of my said will the Congress of the United States, having passed an act making a grant of lands to the various States of the Union to endow colleges for the benefit of agriculture and the mechanic arts, entitled "An act donating land to the several States and territories which may provide colleges for the benefit of agriculture and the mechanic arts." Approved July 2d, 1862.

AND WHEREAS, The said act provides a fund for the same purposes in part as does my said last will and testament, and my desire is to add to and increase said fund for the purposes named.

NOW, THEREFORE, I do hereby declare this present writing to be as a codicil to my said will, and direct the same to be annexed thereto, and be taken as a part thereof.

My object being mainly to promote the improvement of agriculture, though willing that the college to be established should also provide for the mechanic arts, it is my will that the institution to be established by the State, which shall by due acceptance of the terms upon which my bequest is made, and agreement therewith shall be called and designated College of Agriculture and the Mechanic Arts, with the name of the State, which shall become entitled under my said will to the property bequeathed therein, prefixed, as, for instance, The New Hampshire College of Agriculture and the Mechanic Arts, if that shall be the wish of the State; and, that in addition to the instruction to be given therein, as provided by my said will, there shall be taught only such other arts or sciences as may be necessary to enable said State to fully avail itself of said donation of lands by the government in good faith, which two branches of instruction shall be the leading objects of said institution or college.

If both the said States named in my will shall fail to accept my bequest within the time limited therein, then, and in that case, I give, devise, and bequeath all my said estate to the State of Michigan, upon the same trusts, terms, and conditions as I have in my will required of the State of Massachusetts; and I give to my executors authority in the mean time to enter upon and take charge of, and have the care of my estate, and to hold and preserve the same until one or the other of the said States shall have accepted the terms of this will and become entitled to the bequests herein made.

And it shall be the duty of my executors, herein named, whenever this will shall become operative, to communicate the same to the governors of New Hampshire, Massachusetts, and Michigan, in the order in which each shall become entitled to accept the said terms and bequests, and as soon as each shall become entitled by the terms hereof.

And I authorize and direct my said executors, and give them full power to make and enter into such stipulations, and require such guarantees of the State which shall accept, as will secure the objects

which are intended to be secured by my said will and this codicil before my said estate shall be turned over to and become the property of said State.

ITEM. I hereby modify my bequest made in my said will, so far as the following legacies are concerned, which will be and are hereby reserved from the said general bequest of my estate, viz.: I give twelve (12) shares in the Boston & Maine Railroad Company to the CONGREGATIONAL SOCIETY IN DURHAM, in trust, and upon the condition that the said shares shall forever be kept as a fund by said society and the annual income thereof be used for the improvement of sacred music in said society.

I also give ten (10) shares in the Suffolk National Bank, Boston, to LUCETTA M. DAVIS, my housekeeper, as a testimonial of my respect and esteem for her character, and of the consideration in which I hold her services in my house; and in case the said Lucetta M. Davis continues to be my housekeeper at the time of my decease, then, and in that case, I give to the said Lucetta M. Davis, in addition thereto, ten (10) shares more in the same bank.

I give also one hundred dollars to ASA A. TUFTS, cashier of the Strafford National Bank, Dover, as a slight testimonial of my regard and esteem.

I give two hundred dollars to BENJAMIN D. HILL, of Durham, New Hampshire.

I annul the appointment of executors heretofore named, and all former codicils, and appoint the following named persons to be the executors of my said will, with the usual authority as such, viz.: James F. Joy of Detroit, Michigan, and Joshua B. Smith of Durham, New Hampshire.

In witness whereof I have hereunto set my hand and seal this twenty-first day of March, in the year of our Lord one thousand eight hundred and seventy-four.

(Signed) BENJAMIN THOMPSON. [L. s.]

Signed, sealed, published, and declared by the said Benjamin Thompson, as a codicil to his last will and testament, in presence of us, who, at his request, in his presence and in presence of each other, have subscribed our names as witnesses thereto.

(Signed) WILLIAM P. SYLVESTER.
FRANK A. J. SYLVESTER.
LEVI CRAM.

CODICIL SECOND.

Having required in my will that the State which should become entitled to the bequest therein made should guarantee a net annual compound interest of five (5) per cent upon the appraised value of my Warner farm, so called, and all my other lands and buildings situated in Durham, and mentioned in my said will and testament, for the term of twenty (20) years after my decease, as one of the conditions upon which it should become entitled, and being doubtful whether this condition may not constitute an obstacle in the way of the acceptance of my said bequests by my native State, and possibly the others in succession. Therefore it is my declared will that it shall be competent for my executors named in and by my said will, or any codicil thereto, to waive the said condition, in case that shall be the sole obstacle in the acceptance of the said bequests, but with the hope that the waiver of said condition may not be found necessary, and with the declared will that it shall stand as a condition, unless by them waived for the purpose of carrying into effect the object and purpose of my said last will and testament.

In witness whereof I have hereunto set my hand and seal this fifteenth day of March, A. D. 1875.

(Signed) BENJAMIN THOMPSON. [L. S.]

Signed, sealed, published, and declared by the said Benjamin Thompson, as a second codicil to his last will and testament, in presence of us, who, at his request, in his presence and in presence of each other, have subscribed our names as witnesses thereto.

(Signed) LEVI CRAM.

JOHN McDANIEL.

JAMES F. GRIFFIN.

THIRD CODICIL.

I, Benjamin Thompson, do make this, the third codicil, to become a part of my last will and testament, in view of the lower rates of interest which now prevail than at the time my said will and former codicils were made, and do provide and declare that the rate of interest provided in my said will, to be compounded for twenty years, shall be reduced to four per cent, compounded for the same length of time, in case my bequests and the terms of my said will be accepted and complied with by either of my legatees.

And I further waive, in favor of my native State of New Hampshire, all the interest on the valuation of my real estate, situated in the town of Durham, in case it shall accept the bequests made in my said will, and upon the terms made in it and the codicils.

In addition to the bequests made in my will and former codicils, to my housekeeper, L. M. DAVIS, I give and bequeath to her all my household furniture and wearing apparel, which I value at about a thousand dollars, as a testimony both of my regard and of my appreciation of her long and faithful services.

I hereby constitute and appoint as one of the executors of my said will, instead of J. B. Smith, whose appointment I revoke and annul, John W. E. Thompson, to act as such with J. F. Joy, giving them all the usual authority in such cases, as if they had been named originally in my said will as the executors thereof.

In witness whereof I have hereunto set my hand and seal this twenty-first day of January, A. D. 1882.

(Signed) BENJAMIN THOMPSON. [L. s.]

Signed, sealed, published, and declared by the said Benjamin Thompson, as a codicil to his last will and testament, in presence of us, who, at his request, in his presence and in presence of each other, have subscribed our names as witnesses thereto.

(Signed) JOHN McDANIEL.
ALVIN JACKSON.
JASPER R. McDANIEL.

(a) APPOINTMENT OF EXECUTORS.

THE STATE OF NEW HAMPSHIRE.

STRAFFORD, SS.

PROBATE OFFICE, DOVER.

I, Charles S. Clifford, register of probate for said county, hereby certify that at a probate court, duly holden at Dover, in said county, on the 1st Tuesday of March, in the year of our Lord one thousand eight hundred and ninety, James F. Joy of Detroit, Mich., and Elisha R. Brown of Dover, in said county, were duly appointed and commissioned executors of the last will and testament of Benjamin Thompson, late of Durham, in said county, deceased.

That the said executors accepted said trust and gave bond, approved by said court, for the faithful performance of said trust, as required by the laws of this State.

I further certify, that it appears by the records and files of said court, in this office, that said appointment remains in full force, and is in no way revoked, reversed, or annulled.

In testimony whereof I have hereunto set my hand and affixed the seal of said court, at the probate office aforesaid, this 17th day of March, in the year of our Lord one thousand eight hundred and ninety.

[L. s.]

(Signed) CHARLES S. CLIFFORD,
Register.

(b) APPOINTMENT OF APPRAISERS.

STATE OF NEW HAMPSHIRE.

STRAFFORD, SS. THE JUDGE OF PROBATE FOR THE COUNTY OF
STRAFFORD.

To Winthrop S. Meserve, Hamilton A. Mathes, and Charles S. Cartland, all in said county :

You are hereby authorized to take an inventory of the estate of Benjamin Thompson, late of Durham, in said county, deceased, testate, to be shown to you by James F. Joy of Detroit, Mich., and Elisha R. Brown of Dover, N. H., who are the executors of the last will of said deceased, and to make a just and impartial appraisement thereof, according to the best of your judgment, and return the same, under your hands, and under oath to your fidelity and impartiality therein, unto the registry of the court of probate for said county, within three months next ensuing together with this warrant.

You will class the different articles of the estate under the heads given below ; foot up the amount of each class, and enter each amount under its proper head.

Dated at Dover, this 4th day of March, A. D. 1890.

(Signed) J. D. YOUNG,
Judge of Probate.

PERSONAL ESTATE.

Cash on hand	\$14,387.74
Stock in trade	
Stock in banks and other corporations .	298,557.00
Bonds, notes, and other written evidences of debt	76,743.47
Live stock	
Provisions and produce	
Farming utensils and mechanics' tools .	132.25
Household furniture	232.50
Books and maps	
Wearing apparel	
Miscellaneous articles	40.00
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Amount of personal estate	\$390,092.96
Real estate	18,300.00
<hr/>	
Total	\$408,392.96

WINTHROP S. MESERVE,
HAMILTON A. MATHES,
CHAS. S. CARTLAND,
Appraisers.

JAMES F. JOY,
ELISHA R. BROWN,
Executors.

(c) ORIGINAL INVENTORY.

An inventory and appraisement of the estate of Benjamin Thompson, late of Durham, in the county of Strafford, deceased, testate.

REAL ESTATE.

"Warner farm," in Durham, about 220 acres	\$15,000.00
House in Durham, with about 8 acres .	1,800.00
Lot on south side river, Durham, about 15 acres	200.00
Wood lot, Nottingham, about 24 acres .	1,200.00
One eighth interest in Oyster river B'd'g .	100.00
<hr/>	
	\$18,300.00

Amount brought forward \$18,300.00

PERSONAL ESTATE.

Bonds.

19,000 Chicago, Burlington & Quincy 7 % ,	
1903, @ 123	\$23,370.00
8,000 Chicago, Burlington & Quincy 4 % ,	
1922, @ 92	7,360.00
1,000 Chicago, Burlington & Quincy 7 % ,	
1890	1,000.00
5,000 Chicago, Milwaukee & St. Paul	
6 % , 1920, 103 div.	5,150.00
6,000 Chicago, Milwaukee & St. Paul	
5 % , 1920, C. & P. W., 105	6,300.00
4,500 Wis. Val., 7 % , 1909, 120	5,400.00
1,500 Con. R. R., of Vt., 5 % , 1913, 85	1,275.00
2,000 Cent. Pac., 6 % , 1895, 110	2,200.00
1,000 Oregon Nav. 6 % , 1909, 108	1,080.00
2,500 State of S. C. 6 % , 1903, 100	2,500.00
3,000 Chicago Water Loan 7 % , 1890, 100	3,000.00
2,000 Chicago Water Loan 7 % , 1894, 108	2,160.00
	<hr/>
	\$60,795.00

Bank Stocks.

78 shares Strafford Nat'l, Dover, 175	\$13,650.00
7 " Newmarket Nat'l, Newmarket,	
100	700.00
42 " Suffolk Nat'l, Boston, 117	4,914.00
13 " North Nat'l, " 145	1,885.00
40 " Tremont Nat'l, " 110	4,400.00
21 " No. America Nat'l, " 120	2,520.00
10 " City Nat'l, " 95	950.00
50 " Merchants Nat'l, " 150	7,500.00
9 " Commerce Nat'l, " 130	1,170.00
12 " Atlas Nat'l, " 117	1,404.00
10 " Globe Nat'l, " 100	1,000.00
	<hr/>
	\$40,093.00
<i>Amount carried forward</i>	\$119,188.00

Amount brought forward \$119,188.00

Railroad Stocks.

100 shares Portland & Ogdensburg,	38 .	\$3,800.00	
106 " Fitchburg,	90 .	9,540.00	
56 " Dover & Winnipiseogee,	125 .	7,000.00	
33 " Rutland Common, a	5 .	165.00	
10 " Ogdensburg & L. C. Com.,	5 .	50.00	
66 " Boston & Lowell,	174 .	11,484.00	
50 " Atch., Topeka & S. Fé,	36 .	1,800.00	
81 " Michigan Central,	97 .	7,857.00	
42 " Vermont & Mass.,	133 .	5,586.00	
161 " Boston & Maine,	220 .	35,420.00	
69 " Boston & Albany,	217 .	14,973.00	
66 " Illinois Central,	113 .	7,458.00	
310 " New York Central,	106½	33,015.00	
250 " Union Pacific,	62 .	15,500.00	
900 " Chi., Bur. & Qui.,	106 .	95,400.00	
		<hr/>	\$249,048.00

Manufacturing Stocks.

10 shares Boston Belting Co.,	175 .	\$1,750.00	
6 " Cocheco Co.,	490 .	2,940.00	
43 " Great Falls Co.,	107 .	4,601.00	
		<hr/>	\$9,291.00

Land Stocks.

25 shares Boston Water Power, @ 5	.	\$125.00	
\$200 scrip, " " " No value known	.		
		<hr/>	\$125.00
Deposit in Strafford Nat'l Bank, Dover	.		\$14,172.74
Deposit in savings bank for county of Strafford	.		15,948.47
Cash on hand	.		215.00
Household furniture, clothing, books, etc.	.		232.50

Miscellaneous.

\$1,100 State of Virginia scrip.	No present value	.	
\$30,000 State of South Carolina Non-Fundable Bonds.			
No present value	.	.	.
		<hr/>	\$408,220.71

Amount carried forward \$408,220.71

<i>Amount brought forward</i>	\$408,220.71
\$2,200 Consolidated debt of Va. No present value .	
{ \$500 1st Con. Mort.	
500 Income "	
{ Ogdensburg & Lake Champlain Railroad. No present	
value	

Farming Utensils.

Dump cart (1-horse)	\$2.00
2 ox carts and three pairs wheels	25.00
1 wagon	12.00
1 chaise	5.00
1 sleigh	1.00
Harness and saddles	2.00
Chains, forks, yokes, etc.	3.00
Chains, tools, etc. (tool house)	5.00
Yokes, vise, etc., in chamber	5.00
Hay, 8 tons	64.00
Carriage jack . . . . .	.75
Ladders	3.00
1½ M shingles	4.50
	<hr/>
	\$132.25
1 pew in Congregational church	40.00
5 shares Oyster River Creamery. No value known .	
	<hr/>
	\$408,392.96

WINTHROP S. MESERVE,
HAMILTON A. MATHES,
CHAS. S. CARTLAND,

Appraisers.

JAMES F. JOY,
ELISHA R. BROWN.

Executors.

STRAFFORD, SS.

MARCH 21, A. D. 1890.

Personally appearing, the said Winthrop S. Meserve, Hamilton A. Mathes, and Charles S. Cartland, and made oath that the foregoing inventory, by them signed, contains a just and impartial appraisement

of the estate of said deceased, and that in making the same they acted with fidelity and impartiality.

Before me,

EPHRAIM JENKINS,

Justice of the Peace.

STRAFFORD, SS.

MARCH 21, A. D. 1890.

Personally appearing, the said Elisha R. Brown, executor of the estate of Benjamin Thompson, deceased, and made oath that the foregoing inventory, by him signed, is a true and perfect inventory of all the estate of said deceased that has come to his knowledge, and that if any further estate of said deceased shall hereafter come to his knowledge, he will account for the same according to law.

Before me,

EPHRAIM JENKINS,

Justice of the Peace.

STATE OF MICHIGAN.

COUNTY OF WAYNE, SS.

Be it remembered, that on the twenty-fourth day of March, in the year eighteen hundred and ninety, before me, the undersigned, notary public, within and for the county of Wayne, State of Michigan, personally appeared the above James F. Joy, one of the executors of the estate of Benjamin Thompson, deceased, and made oath that the foregoing inventory, by him signed, is a true and perfect inventory of all the estate of said deceased that has come to his knowledge, and that if any further estate of said deceased shall hereafter come to his knowledge he will account for the same according to law.

In testimony whereof, I have hereunto set my hand and affixed my notarial seal, this twenty-fourth day of March, in the year of our Lord one thousand eight hundred and ninety.

[L. S.]

HENRY B. JOY,

Notary Public,

Wayne County, Mich.

NO. 1. NOTARIAL CERTIFICATE.

STATE OF MICHIGAN.

COUNTY OF WAYNE, SS.

I, William P. Lane, clerk of said county, and clerk of the circuit court for the county of Wayne, which is a court of record, having a seal, do hereby certify that Henry B. Joy, whose name is subscribed

to the jurat of the annexed instrument, and therein written, was at the time of taking such jurat a notary public, in and for said county, duly commissioned and qualified and duly authorized to take the same; and, further, that I am well acquainted with the handwriting of such notary public, and verily believe that the signature to the said jurat is genuine.

In testimony whereof, I have hereunto set my hand and affixed the seal of said court and county, at Detroit, this 24th day of March, A. D. 1890.

[L. S.]

WM. P. LANE, *Clerk*.

THE ACCOUNT OF THE EXECUTORS OF THE ESTATE
OF BENJAMIN THOMPSON, LATE OF DURHAM, IN THE
COUNTY OF STRAFFORD, DECEASED.

The executors charge themselves with the several amounts received as stated on page I within :

Receipts	\$419,282.67
The executors ask to be allowed for payments and charges, as stated on page II within	26,976.40
Balance	<u>\$392,306.27</u>

(Signed) JAMES F. JOY,
E. R. BROWN,
Executors.

The undersigned parties interested having examined the foregoing accounts, request that the same may be allowed.

STATE OF NEW HAMPSHIRE.

STRAFFORD, SS.

At a special court of probate, holden at Dover, in said county, on the 19th day of August, A. D. 1891. The foregoing account having been presented for allowance, and said executors having given due notice to all parties interested to be present and heard thereon, at said time and place; and said hearing having been continued to the 3d Tuesday of August, at Farmington, and having been now had;

and said executors having duly made oath before me that said account was just and true, and the same appearing just and reasonable, I do, therefore, allow the same, and do decree that there is upon said account a balance of \$392,306.27 due from said executors.

(Signed) J. D. YOUNG,
Judge of Probate.

J. F. Joy and E. R. Brown's account of administering the estate of Benjamin Thompson, late of Durham, in said county, deceased.

EXECUTORS.

DR.

I.

For amount of goods and chattels of deceased, as per inventory	\$364.75
For gain on sale of goods and chattels, as per paper A	9.81
For amount collected on notes and special contracts, as per paper B	
For amount collected on book accounts, as per paper C	
For amount accruing from sale of real estate, as per paper D	
For amount received for rents of real estate, as per paper E	181.00
For amount received for rents of real estate since filing account	110.00
For amount of assets not inventoried	
For amount interest on stocks, bonds, and savings bank deposit	21,810.33
For amount interest on stocks, bonds, and savings bank deposit, since account rendered	7,078.57
For amount collected on matured bonds	4,000.00
For inventory of personal property less goods and chattels (\$364.75) and amount collected on matured bonds (\$4,000), as above stated	385,728.21
	<hr/>
	\$419,282.67

EXECUTORS.

CR.

II.

By paid widow of deceased for allowance out of personal estate, as per paper 1	
By paid funeral expenses of deceased, as per paper 2	\$221.00
By paid claims for last sickness of deceased, as per paper 3	106.00
By loss on the sale of goods and chattels, as per paper 4	
By paid sundry debts of deceased, as per paper 5	548.00
By paid sundry legacies of deceased, as per paper 6	5,512.50
By paid rates and taxes, as per paper 7	1,409.17
By paid rates since account filed	18.60
By paid for gravestones, as per paper 8	
By expenses of administration, as per paper 9	5,155.05
By paid for investment, as per obligations entered into by deceased, and for rights and stocks in B. & A. R. R., as per paper 10	2,253.76
For their services and care, risk and responsibility in the charge of the estate for about eighteen months, as well as in connection with the contest over the will, the executor's commission is $2\frac{1}{2}\%$ on the amount of the property received and cared for during that time, being the sum of	9,752.32
Also because it became necessary, in the progress of the affairs of the estate, for Mr. Joy to come to Dover from Detroit several times, involving about a week each time, and because it was necessary to visit Concord and the legislature twice, involving about a week each time, he makes a charge of one thousand dollars	1,000.00
There have been collected for rents and interest in small sums, and from other sources during the year and a half, \$33,554.46, for which they charge one thousand dollars	1,000.00
	<hr/>
	\$26,976.40

[FILING.]

No. 7,050.

Administrators' (?) account, estate of Benjamin Thompson.

Recorded vol. 85, page 512, filed April 30, 1891, returnable at Dover, 1st Tuesday, June, 1891.

James F. Joy and Elisha R. Brown, executors of the will of Benjamin Thompson, late of Durham, deceased.

To amount of goods and chattels, as per inventory	\$364.75
To gain on sale of goods and chattels, as per paper A	
To gain on farming utensils and mechanics' tools sold,	
the same being inventoried at \$132.25, and sold at	
\$142.06	9.81
To amount received for rents of real estate, as per	
paper E	
1890, to received for pasturage on Warner	
farm	\$54.00
1890, to received for sale of grass on Warner	
farm	127.00
1891, August, to received for sale of grass	110.00
	<hr/>
	\$291.00
To interest received —	
1890.	
Mar. 18. Interest on 2,000 Central Pacific bond	\$60.00
“ 5,000 Chicago bond	175.00
“ 2,500 South Carolina bond	75.00
“ 5,000 Chi., Mil. & St. Paul, 6s	150.00
“ 6,000 “ “ 5s	150.00
“ 1,000 Oregon Navigation	30.00
“ 4,500 Wisconsin Valley, 7s	157.50
“ 1,500 Consol. R. R., Vermont	37.50
“ 1,000 Chi., Bur. & Quincy	35.00
“ 8,000 “ “	160.00
“ 81 shares Mich. Cen. R. R.	243.00
“ 10 “ Boston Belting Co.	70.00
“ 66 “ Illinois Cent. R. R.	198.00
“ 100 “ Port. & Ogd. R. R.	25.00
21. “ 900 “ Chi., B. & Q. R. R.	1,125.00
	<hr/>
Amount carried forward	\$2,691.00

<i>Amount brought forward</i>				\$2,691.00
Mar. 28.	Interest on 50 shares	Merchants Nat. Bank		150.00
	" 13 "	North "		39.00
	" 12 "	Atlas "		30.00
	" 9 "	Commerce "		27.00
	" 10 "	City "		20.00
	" 40 "	Tremont "		100.00
	" 21 "	No. America "		63.00
	" 42 "	Suffolk "		84.00
	" 10 "	Globe "		20.00
31.	" 69 "	Boston & Albany R.R.		138.00
April 1.	" 1,000	Chi., Bur. & Qui. bond .		35.00
	" 2,000	Or. Sh. L. & Ut. N. R. R.		14.16
7.	" 42 shares	Vt. & Mass. R. R. .		126.00
15.	" 310 "	New York Cent. R.R.		310.00
May 1.	" 56 "	Dover & Winn. R. R.		168.00
15.	" 161 "	Boston & Maine R. R.		724.50
31.	" 6 "	Cochecho Mfg. Co. .		60.00
		Extra div. on C., B. & Q. R. R.		
		in shape of rights, sold for .		922.50
June 2.	" 43 shares	Great Falls Mfg. Co. .		129.00
	" 10 "	Boston Belting Co. .		50.00
16.	" 900 "	Chi., B. & Q. R. R.		1,125.00
	" 100 "	Port. & Og. R. R. .		25.00
30.	" 69 "	Boston & Albany R.R.		138.00
	" 2,500	South Carolina bonds .		75.00
	" 5,000	Chi., Mil. & St. Paul .		150.00
	" 6,000	Chi., Mil. & St. Paul .		150.00
	" 1,000	Oregon Navigation .		30.00
	" 2,000	Central Pacific R. R. .		60.00
	" 1,500	Consol. R. R., Vermont .		37.50
	" 4,500	Wisconsin Valley R. R. .		157.50
	" 19,000	Chi., Bur. & Qui. R. R. .		665.00
	" 5,000	City Chicago bonds .		175.00
July 1.	" 66 shares	Boston & Lowell R. R.		231.00
	"	extra div. on B. & M. R. R.,		
		fractional rights sold .		119.09
15.	" 106 shares	Fitchburg R. R. .		212.00
<i>Amount carried forward</i>				\$9,251.25

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<i>Amount brought forward</i>				\$9,251.25
July 15.	Interest on 310 shares	New York Cen. R. R.		310.00
Aug. 1.	" 81	" Michigan Cen. "		162.00
Sept. 8.	" 100	" Port. & Og. "		25.00
	" 66	" Illinois Central "		198.00
15.	" 900	" Chi., B. & Q. "		1,125.00
Oct. 3.	" 21	" No. Am. Nat. Bank		63.00
	" 42	" Suffolk "		84.00
	" 40	" Tremont "		100.00
	" 10	" City "		20.00
	" 9	" Commerce "		27.00
	" 13	" North "		39.00
	" 10	" Globe "		20.00
	" 12	" Atlas "		30.00
	" 50	" Merchants "		150.00
	" 78	" Strafford "		390.00
	" 69	" Boston & Albany R. R.		138.00
7.	" 42	" Vt. & Mass. "		126.00
15.	" 310	" New York Cent. "		310.00
Nov. 1.	" 56	" Dover & Winn. "		168.00
	" 184	" Boston & Maine "		920.00
28.	" 10	" Boston Belting Co. .		60.00
Dec. 4.	" 1,000	Chi., B. & Q. bond .		35.00
	" 2,000	Oregon Short L. bond .		50.00
	" 8,000	Chi., Bur. & Qui. . .		160.00
5.	" 43 shares	Gt. Falls Mfg. Co. .		129.00
	" 100	" Port. & Og. R. R. .		25.00
15.	" 900	" Chi., Bur. & Q. R. R.		1,125.00
1891.				
Jan. 1.	" 1,500	Con. R. R., of Vt. bond .		37.50
	" 2,500	South Carolina bonds .		75.00
	" 5,000	Chi., Mil. & St. Paul bonds		150.00
	" 6,000	" " " "		150.00
	" 1,000	Oregon Navigation "		30.00
	" 2,000	Central Pacific "		60.00
	" 2,000	City Chicago "		70.00
	" 4,500	Wisconsin Valley R.R. "		157.50
	" 19,000	Chi., Bur. & Qui. R.R. "		665.00
<i>Amount carried forward</i>				\$16,635.25

		<i>Amount brought forward</i>		\$16,635.25
Jan.	1.	Interest on 78 shares	Strafford Nat'l Bank .	390.00
		" 69 "	Boston & Al. R. R. .	138.00
		" 66 "	Boston & Low. R. R.	231.00
		" 6 "	Cocheco Mfg. Co. .	60.00
		" 106 "	Fitchburg R. R. .	212.00
		" 310 "	N. York Central R. R.	465.00
	30.	" 8,000	Chi., Bur. & Qui. bond .	160.00
Feb.	2.	" 81 shares	Mich. Central R. R. .	243.00
Mar.	4.	" 66 "	Illinois Central " .	198.00
		" 100 "	Portland & Og. " .	25.00
	16.	" 900 "	Chi., Bur. & Q. " .	900.00
	24.	"	at Strafford Bank . . .	996.08
April	1.	" 50 shares	Mer. Nat'l Bank .	150.00
		" 69 "	Boston & Albany R.R.	138.00
		" 12 "	Atlas Nat'l Bank .	30.00
		" 13 "	North Nat'l " .	39.00
		" 42 "	Suffolk Nat'l " .	84.00
		" 21 "	North America Bank	63.00
		" 9 "	Commerce " .	27.00
		" 40 "	Tremont " .	100.00
		" 10 "	City " .	20.00
		" 10 "	Globe " .	20.00
		" 2,000	Oregon Short Line R.R. .	50.00
	7.	" 42 shares	Vt. & Mass. " .	126.00
	16.	" 310 "	N. Y. Central " .	310.00
				<hr/>
				\$21,810.33
May	2.	Interest on 56 shares	D. & Winn. R. R. .	\$168.00
	16.	" 184 "	B. & M. R. R. .	828.00
June	1.	" 6 "	Cocheco Mfg. Co. .	60.00
		" 10 "	Boston Belting Co. .	60.00
		" 43 "	Great Falls Mfg. Co. .	129.00
	15.	" 900 "	C. B. & Q. R. R. .	900.00
		" 100 "	Port. & Og. R. R. .	25.00
	30.	" 69 "	Boston & Albany R.R.	138.00
		" 78 "	Strafford Nat. Bank .	390.00
July	1.	" 66 "	Boston & Lowell R. R.	231.00
				<hr/>
		<i>Amount carried forward</i>		\$2,929.00

STATE TREASURER'S REPORT.

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<i>Amount brought forward</i>	\$2,929.00
July 15. Interest on 106 shares Fitchburg R. R.	159.00
“ 310 “ New York Cen. R. R.	310.00
Aug. 1. “ 81 “ Michigan Cen. R. R.	162.00
18. Sale of rights, B. & M. R. R.	2,829.00
Interest Strafford Savings Bank	689.57
	<hr/>
	\$7,078.57

To received from bonds matured and paid off—

1890.	DR.
July 1. City of Chicago	\$3,000.00
Dec. 1. Chicago, Burlington & Quincy Railroad	1,000.00
	<hr/>
	\$4,000.00

A.

James F. Joy and Elisha R. Brown, executors of will of
Benjamin Thompson, late of Durham, deceased—

CR.

By paid funeral expenses, as per paper 2 :

A. N. Ward, undertaker	\$215.00
E. Jenkins' bill	6.00
	<hr/>
	\$221.00

Claims for last sickness, as per paper 3 :

Dr. S. H. Green's bill	\$41.00
E. Jenkins' bill, for watching nights	66.00
Dr. W. G. Perry's bill	10.00
	<hr/>
	\$106.00

Paid sundry debts of deceased, as per paper 5 :

1890. B. D. Hill, work on farm	\$38.00
Jan. 30. Lucetta M. Davis, labor	66.00
1891.	
Jan. 1. Lucetta M. Davis, services as nurse	444.00
	<hr/>
	\$548.00

Rates and taxes, as per paper 7 :

1890.	
June 9. Town of Durham	\$130.90
Oct. 22. Town of Nottingham	20.13
	<hr/>
<i>Amount carried forward</i>	\$151.03

<i>Amount brought forward</i>	\$151.03
Town of Durham, highway	38.50
Dec. 1. City of Dover	1,219.64
1891.	
July 11. Tax in Nottingham	18.60
	<hr/>
	\$1,427.77

Paid for grave stones, as per paper 8 :

By paid sundry legacies of deceased, paper 6 :

1891.		
Aug.	By paid Lucetta M. Davis, 20 shares Suffolk Nat. Bank, Boston, appraised at \$117 per share	\$2,340.00
	By household furniture, appraised	232.50
	By Congregational Society of Durham, 12 shares B. & M. R. R., appraised @ \$220 per share	2,640.00
	By heirs of Asa A. Tufts	100.00
	By Benjamin D. Hill	200.00
		<hr/>
		\$5,512.50

Expenses of Administration, paper 9 :

1890.					
Mar. 6.	F. A. J. Sylvester, witness probate will	.	.		\$12.34
	Sylvester Cram	"	"	.	3.65
	Levi Cram	"	"	.	5.65
	E. B. Lane, for record account book	.	.		1.20
	Thomas Groom, trunk and bond envelopes	.	.		9.50
14.	J. L. Fairbanks, record book	.	.	.	2.00
21.	H. C. Grimes, copying	.	.	.	1.00
22.	Niles Express	.	.	.	1.00
	W. S. Meserve, H. A. Mathes, and C. S. Cartland as appraisers	.	.	.	60.00
April 10.	Strafford County Democratic Association, advertising notice of appointment	.	.	.	1.50
May 15.	V. H. McDaniel, auctioneer, selling farming tools	.	.	.	13.50
28.	B. D. Hill, services on farm	.	.	.	20.00
	<i>Amount carried forward</i>	.	.	.	<hr/> \$131.34

STATE TREASURER'S REPORT.

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	<i>Amount brought forward</i>	\$131.34
June 5.	Commercial Union Telegraph Company	.76
	“ “ “ “	.50
9.	F. A. J. Sylvester, witness probate will in solemn form	20.00
	J. R. McDaniel, witness probate will in solemn form	10.00
	Levi Cram, witness probate will in solemn form	10.00
	Sylvester Cram, witness probate will in solemn form	8.00
	Alvan Jackson, witness probate will in solemn form	5.50
	Joshua B. Smith, witness probate will in solemn form	5.00
	Joseph W. Coe, witness probate will in solemn form	5.00
	Scales & Quimby, advertising bill	8.50
	C. S. Clifford, copies of wills and probate letters	41.00
	Jacob D. Young, Judge of Probate, for holding two special terms of court	16.00
	W. L. Foster, on acct. services as counsel	100.00
	B. D. Hill, work on farm	14.05
	J. P. Church “ “	11.75
	Jackson & Co., express	3.00
	Strafford National Bank, express on bonds	.80
	Alvan Jackson's bill	7.47
	H. A. Mathes and W. S. Meserve, for services in Durham, selling grass	10.00
	B. D. Hill, work on farm	9.50
	Republican Press Association, 500 copies will	25.00
	Geo. J. Foster & Co., executor's notice	1.50
April 1.	Ephraim Jenkins, bill services and money paid out in looking up evidence and helping prepare will case for trial	95.40
	E. R. Brown, travelling and hotel expenses to Durham, Boston, and New York	72.00
	<i>Amount carried forward</i>	\$612.07

	<i>Amount brought forward</i>	\$612.07
April 1.	Paid J. F. Joy, executor, for money paid out for his hotel and travelling expenses as exec- utor, between Detroit, Dover, and Concord .	291.21
	A. O. Mathes, for copying	5.00
	J. G. Hall, for travelling and hotel expenses and money paid out	100.26
1891.	Paid B. D. Hill for services on farm	23.00
Aug. 18.	Wm. L. Foster, bill as counsel in litigation rel- ative to contest over will of Benjamin Thompson and services at the litigation and expenses	2,043.55
	Joshua G. Hall, for similar services	2,071.96
19.	Judge of Probate, for attending at special term to settle account this day and expenses .	8.00
		<hr/> \$5,155.05

PAPER 10.

1890.		
Mar. 12.	Paid for 2,000, Oregon Short Line and Utah Northern R. R. bonds, and 8 shares stock of same, having been subscribed for by tes- tator	\$2,008.89
	Paid for Boston & Albany 3 rights	64.87
	Paid 10% subscription on 18 shares new stock of Boston & Albany	180.00
		<hr/> \$2,253.76

STATE OF NEW HAMPSHIRE.

STRAFFORD, SS.

PROBATE OFFICE.

I, Charles S. Clifford, Register of the Probate Court for the County of Strafford, having by law the custody of the seal and all the records, books, documents and papers of or appertaining to said court, hereby certify the paper hereto annexed to be true copies of papers appertaining to said court, and on file and of record in the office of said court, viz. :

The inventory of the estate of Benjamin Thompson, late of Durham, in said county, deceased, also the executors' account as settled by James F. Joy and Elisha R. Brown, executors of said estate.

In witness whereof, I have hereunto set my hand and affixed the seal of said court this 14th day of September, in the year of our Lord one thousand eight hundred and ninety one.

[L. S.]

(Signed) CHARLES S. CLIFFORD,

Register.

CHAPTER 12, PAMPHLET LAWS, 1891.

AN ACT TO ACCEPT THE PROVISIONS OF THE THOMPSON WILL AND TO PROVIDE FOR THE PRESENT DISPOSITION OF THE FUNDS.

WHEREAS, Benjamin Thompson, late of Durham, in this state, died January 30, 1890, leaving a will and codicils thereto which have been proved, approved and allowed by the probate court of the county of Strafford, by which he devised a large share of his property to the state of New Hampshire, in trust, for the establishment and maintenance of a school or college to be located on his "Warner farm," in said Durham, wherein there shall be thoroughly taught both in the schoolroom and in the field the theory and practice of agriculture and other sciences connected therewith, and wherein there may be taught such other arts and sciences as may be necessary to enable the state to fully avail itself of the donation of land made by the act of the Congress of the United States, approved July 2, 1862, entitled "An act donating land to the several states and territories which may provide colleges for the benefit of agriculture and the mechanic arts," and

WHEREAS, said bequest is made subject to certain provisos, conditions and limitations set forth in the will and the codicils thereto to which reference is made for the particulars thereof, and

WHEREAS, by one of said conditions it is provided that said bequest shall become null and void if the state does not accept the trust within two years from the time of the decease of said Thompson: now, therefore,

Be it enacted by the Senate and House of Representatives in General Court convened:

SECTION 1. That the state of New Hampshire does hereby gratefully accept said bequest, subject to the provisos, conditions and limitations set forth in said will as modified by the codicils thereto, and in consideration thereof, does hereby promise to execute said trust in accordance with the terms of said will.

SECT. 2. The state, in compliance with the requirements of said will and codicils promises and guarantees to appropriate and does hereby appropriate annually for the term of twenty years from and after said Thompson's death, such sum as will pay a net annual compound interest of four per cent per annum upon the amount of the appraised value of the estate bequeathed and devised to the state as aforesaid, aside from the real estate situated in said Durham, after deducting therefrom the legacies given by the codicils to said will, and does hereby authorize and direct the state treasurer to credit said sums to the trust fund, as provided in the fourth section of this chapter.

SECT. 3. The state in further compliance with the requirements of said will and codicils, promises and guarantees to appropriate, and does hereby appropriate, annually for the term of twenty years from and after said Thompson's death the sum of three thousand dollars, and such further sum as will pay a net annual compound interest of four per cent per annum upon said annual appropriations from the dates when they shall severally become a part of the trust fund until the expiration of said term of twenty years, and does hereby authorize and direct the state treasurer to credit said sums to the trust fund, as provided in the following section.

SECT. 4. The state treasurer upon receipt of the estate devised to it by said will and codicils, shall open two accounts in a book provided for the purpose as follows: He shall open one account with the "Benjamin Thompson Trust Fund," and shall credit therein to said fund, under date of January 30, 1891, the amount of the appraised value of the estate received by the state by virtue of said Thompson's will, together with a sum equal to four per cent upon said appraised value (not including the real estate situated in said Durham), and on the thirtieth day of January in each year thereafter until and including January, 1910, excepting when such day falls on Sunday, and in such cases on the day preceding, he shall credit to said account a sum equal to four per cent upon the total amount of said trust fund, excepting the appraised value of the real estate in said Durham, after the credits of the preceding year have been made. He shall open the other account with the "Benjamin Thompson State Trust Fund," and shall credit therein to said fund under date of January 30, 1891, the sum of three thousand dollars, together with a sum equal to four per cent upon said sum of three thousand dollars, and on the thirtieth day of January in each year thereafter, until and including January, 1910, excepting when such day falls on Sunday, and in such cases on the day

preceding, he shall credit to said account a sum equal to four per cent upon the total amount of said trust fund after the credits of the preceding year have been made.

SECT. 5. The accounts so made shall represent the amounts of the trust funds in the possession of the state; and the state guarantees to preserve them intact and unimpaired until they shall become available for opening and maintaining said school or college and then to administer them as required by said will.

SECT. 6. The state treasurer is hereby authorized to receive from the executors of said will the money, notes, bonds, stocks and evidences of debt coming to the state by virtue of the will and to give proper discharges therefor in the name of the state.

SECT. 7. If any notes, bonds, stocks or evidences of debt shall come to the state treasurer from said executors as a part of said estate, he may, with the approval of the governor and council, convert the same into money, selling the stocks and bonds by auction at the Boston Stock Exchange, or such other place in Boston as property of that kind is usually sold.

SECT. 8. All notes, bonds, stocks and other evidences of debt coming into possession of the treasurer, and not converted into money as aforesaid, shall be transferred to the state and be carefully preserved by the treasurer. The governor and council may authorize any person to vote upon any of such stocks at meetings of stockholders of the corporations to which the stocks appertain, and may authorize a sale and transfer thereof, whenever they deem it for the interest of the state.

SECT. 9. The governor and council are authorized to sell and convey any real estate coming to the state by virtue of the said will, which the state has power to sell, in such manner and at such time as they shall think for the interest of the state, and may make and execute in the name of the state proper conveyances thereof, upon payment of the consideration therefor to the state treasurer.

SECT. 10. All money received from the sources aforesaid shall be used as soon as practicable after its receipt in paying and retiring outstanding indebtedness of the state: and the state treasurer shall keep an itemized and true account of all money and securities of any kind so received, and of the disposition made of the same, and of the proceeds thereof, and shall give a full report thereof in his annual reports, and shall state in each annual report the exact condition of said funds.

SECT. 11. The board of agriculture is hereby authorized and directed in behalf [of] the state to receive possession of the real estate in Durham coming to the state by virtue of said will, and to care for, control and manage it until it is needed for the uses of the school or college to be established as provided in the will.

[NOTE. — The foregoing section was amended by section 7, chapter 52, Pamphlet Laws of 1891, to read as follows: "The trustees of the New Hampshire College of Agriculture and the Mechanic Arts are hereby authorized and directed, in behalf of the State, to receive possession of the real estate in Durham coming to the State by virtue of said will, and to care for, control, and manage it until it is needed for the uses of the school or college to be established as provided in the will."]

SECT. 12. The board shall make report of their doings in respect to such real estate in their annual reports.

SECT. 13. In case the state shall desire to establish said school or college at any time before the expiration of twenty years from the time of the decease of the said Thompson, it shall, before using either of the funds aforesaid, raise and set apart such sums of money as will make said funds equal in amount to what said funds would become if accumulated during the twenty years; and having thus raised and set apart such sums of money, the state shall thereafter be relieved from the obligation of appropriating annually, for the balance of the term of twenty years, the said sum of three thousand dollars, and guaranteeing the net annual compound interest of four per cent thereon, and the state shall also be thereafter relieved from the obligation to provide for or guarantee any interest upon the amount of the appraised value of said estate, as hereinbefore provided.

SECT. 14. The governor and council are authorized, in behalf of the state, to make and enter into such further stipulations with the executors of said will, and to give such further guarantees as the executors shall require to secure the objects intended by said Thompson to be secured by his said will and codicils, and to affix the name and seal of the state thereto, and to do all other acts that may become necessary to secure the rights of the state under said will.

SECT. 15. The said will and codicils shall be recorded in the office of the secretary of state.

SECT. 16. This act shall take effect and be in force from and after its passage.

Approved March 5, 1891.

CONTRACT BETWEEN THE STATE OF NEW HAMPSHIRE AND THE EXECUTORS OF THE LAST WILL OF BENJAMIN THOMPSON.

Provided for by laws of 1891, chapter 12, section 14.

WHEREAS, By will and codicils the late Benjamin Thompson, of Durham, did give and bequeath to the state of New Hampshire substantially his whole estate, both real and personal, in trust for certain purposes therein expressed, and upon certain conditions and terms also therein stated. The objects and purpose of such bequests were :

First, To establish an agricultural school or college within or at the end of twenty years from the time of his decease, in which should be taught the science of agriculture, as provided in his said will, and leaving the state at liberty to add such other arts or sciences as might be necessary to enable the state to fully avail itself of a donation or grant made by the general government to the state to provide a college for the benefit of agriculture and the mechanic arts by virtue of an Act of Congress, approved July 2, 1862. The chief object of the will was to promote the cause of agriculture by establishing an agricultural school or college on his farm at Durham, called the "Warner farm," and to secure the maintenance of the same for such purposes.

Second, To accomplish that object, and with an adequate fund for its maintenance, it was in said will provided that the state should hold the estate bequeathed it by the said will upon the express condition that the state should guarantee a net annual compound interest, at the rate of four per cent per annum, upon the amount of the appraised value thereof, for the term of twenty years from the time of the decease of the testator, the whole amount of principal and interest thus compounded to constitute a fund, the principal of which the state should guarantee forever to preserve, and the net annual income thereof to be expended in maintaining and continuing the said school or college and improving said farm and other lands devised by said will in said Durham.

Third, The said will contained a further condition, that the state should raise and appropriate by law annually for the term of twenty years the sum of three thousand dollars, and guarantee a net annual compound interest of four per cent on said twenty sums of three thousand dollars each, thus required to be raised for the purposes stated in said will.

Fourth, A further condition was made by said will which was, that

no part of the said "Warner farm" and other lands devised, situated in said Durham, should ever be sold, conveyed, leased, or alienated by the state of New Hampshire, or diverted from the purpose of establishing, endowing, and continuing said state agricultural school or college.

AND WHEREAS, The legislature of the state of New Hampshire did at its session of 1891 pass an act fully and gratefully accepting the bequest made to it by the said last will and testament of the said late Benjamin Thompson, in all its parts and under all its conditions, and did also provide in and by said act fully for carrying each and all of the terms and conditions thereof into effect in good faith, which act was approved by the governor, March the fifth, A. D. 1891.

AND WHEREAS, By section fourteen of said act it was provided that the governor and council should be and are authorized in behalf of the state to make and enter into such further stipulations with the executors of said will, and to give such further guaranties as they should require to secure the objects intended to be secured by the said Thompson in and by his said will and codicils.

AND WHEREAS, The said executors are about to turn over all the property of said estate bequeathed by the said Thompson to the state of New Hampshire, and desire a contract that the state will fully and in good faith at all times carefully carry into effect and comply with all the terms and conditions of said will, and will faithfully carry into effect all the terms of the said act of the legislature.

NOW, THEREFORE, This agreement, made on behalf of the state of New Hampshire by Hiram A. Tuttle, the governor of said state, and James Farrington, Henry B. Quinby, George A. Ramsdell, John M. Whipple, and Edwin C. Lewis, members of the said council, this the fourteenth day of September, A. D. 1891, with James F. Joy of Detroit, Michigan, and Elisha R. Brown of Dover, New Hampshire, executors of the said will —

WITNESSETH, That the said governor and council in behalf of the state of New Hampshire, do covenant and agree with said executors and their heirs that it will carefully carry out the provisions of said will, and comply with all its conditions, and establish, and maintain, and continue the said school or college in accordance with the terms of said will, and will maintain and keep in force the law above mentioned, enacted for the purpose of complying with the terms and conditions of said will in all respects, and will carefully regard, comply with, and carry into effect all its provisions. And the said gov-

ernor and council, further acting for and in behalf of the state of New Hampshire, admit and acknowledge that the said executors have turned over and delivered to the state, in compliance with the terms of said will, all and singular, the estate of the said Benjamin Thompson, bequeathed to the state by said will and codicils, as the same has been ascertained and determined by the judge of probate for the county of Strafford, upon the settlement of the account of said executors, and are hereby fully discharged of all care and responsibility with regard thereto, the same having passed out of their possession and become the property of the state of New Hampshire.

In witness whereof the said governor and council have hereunto affixed the name and seal of the state, this fourteenth day of September, 1891.

THE STATE OF NEW HAMPSHIRE,
By HIRAM A. TUTTLE,

Governor.

[L. s.]

(Signed) JAMES FARRINGTON,
HENRY B. QUINBY,
GEO. A. RAMSDELL,
JOHN M. WHIPPLE,
EDWIN C. LEWIS,

Council.

COPY OF RECEIPT GIVEN TO EXECUTORS.

The state of New Hampshire hereby acknowledges the receipt from James F. Joy and Elisha R. Brown, executors of the last will and testament of Benjamin Thompson, late of Durham, New Hampshire, deceased, the following described property, being the personal estate bequeathed to the state by the said Benjamin Thompson, the same having been ascertained and adjusted by the court of probate for the county of Strafford, upon the settlement of the account of said executors in said court.

Bonds.

\$19,000 Chi., Bur. & Quincy, 7%, inventoried at	.	.	\$23,370.00
8,000 Chi., Bur. & Quincy, 4%,	"	.	7,360.00
5,000 Chi., Mil. & St. Paul, 6%,	"	.	5,150.00
<i>Amount carried forward</i>	.	.	\$35,880.00

<i>Amount brought forward</i>	.	.	.	.	.	\$35,880.00
\$6,000 Chi., Mil. & St. Paul, 5 % , inventoried at	.	.	.	.	.	6,300.00
4,500 Wis. Valley, 7 % ,					"	5,400.00
1,500 Con. R. R., of Vt., 5 % ,					"	1,275.00
2,000 Cen. Pacific, 6 % ,					"	2,200.00
1,000 Oregon Nav., 6 % ,					"	1,080.00
2,500 State of South Carolina, 6 % ,					"	2,500.00
2,000 Chicago Water Loan, 7 % ,					"	2,160.00

\$56,795.00

Bank Stocks.

78 shares Strafford National, inventoried at	.	.	.	.	.	\$13,650.00
7 " Newmarket "					"	700.00
22 " Suffolk "					"	2,574.00
13 " North "					"	1,885.00
40 " Tremont "					"	4,400.00
21 " No. America "					"	2,520.00
10 " City "					"	950.00
50 " Merchants "					"	7,500.00
9 " Commerce "					"	1,170.00
12 " Atlas "					"	1,404.00
10 " Globe "					"	1,000.00

\$37,753.00

Railroad Stocks.

100 shares Portland & Ogdens., inventoried at	.	.	.	.	.	\$3,800.00
106 " Fitchburg, "					"	9,540.00
56 " Dover & Winn., "					"	7,000.00
33 " Rutland common, "					"	165.00
10 " Ogd. & L. Champlain, "					"	50.00
66 " Boston & Lowell, "					"	11,484.00
50 " Atch., T. & S. Fé, "					"	1,800.00
81 " Michigan Central, "					"	7,857.00
42 " Vermont & Mass., "					"	5,586.00
149 " Boston & Maine, "					"	32,780.00
69 " Boston & Albany, "					"	14,973.00
66 " Illinois Central, "					"	7,458.00
310 " New York Central, "					"	33,015.00
250 " Union Pacific, "					"	15,500.00
900 " Chi., Bur. & Quincy, "					"	95,400.00

\$246,408.00

Manufacturing Stocks.

10 shares Boston Belting Co., inventoried at	.	.	\$1,750.00
6 " Cocheco Mfg. Co., "	.	.	2,940.00
43 " Great Falls Mfg. Co., "	.	.	4,601.00
			<hr/>
			\$9,291.00

Land Stocks.

25 shares Boston Water Power, inventoried at	.	.	\$125.00
\$200 Boston Water Power scrip.			
			<hr/>
			\$125.00
Pew in Congregational Church, Durham	.	.	\$40.00

Miscellaneous Stocks and Bonds having no known value.

5 shares Oyster River Creamery.*	
\$1,100 State of Virginia scrip.	
30,000 State of South Carolina, non-fundable bonds.	
2,200 Consolidated debt of Virginia.	
500 First Con. Mort. Og. & L. C.	
500 Income bonds "	
2,000 Oregon Short Line & Utah Northern R. R. bonds, subscribed for by the testator and paid for by the executors from funds of the estate.	
8 shares of same railroad received as <i>bonus</i> .	
Subscription for 18 shares of new stock of Boston & Albany R. R., on which has been paid for three rights, and 10% of the subscrip- tion, leaving \$1,620 due and to be paid for January next, upon which the state will be entitled to receive	
18 shares of full paid new stock.	
23 shares stock of the Boston & Maine R. R., received as a stock dividend.	

Certificate of Deposit in the Strafford National Bank to the credit of the state of New Hampshire	.	.	\$41,894.27
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* No certificate.

Amount brought forward \$41,894.27

Recapitulation.

Amount of Bonds	\$56,795.00
Amount of Bank Stocks	37,753.00
Amount of Railroad Stocks	246,408.00
Amount of Manufacturing Stocks	9,291.00
Amount of Land Stocks	125.00
Pew	40.00
	<hr/>
	\$392,306.27

Since their settlement of their account in the probate court, the executors have received dividends and interest as follows:

1891.

Aug. 19.	Newmarket National Bank	\$31.50
21.	Chicago bonds	70.00
	South Carolina bonds	75.00
	Oregon Navigation bonds	30.00
	Central Pacific bonds	60.00
	Consolidated R. R. of Vermont bonds	37.50
	Wisconsin Valley bonds	157.50
	Chicago, Milwaukee & St. Paul bonds	150.00
	“ “ “ “	150.00
	Chicago, Burlington & Quincy bonds	160.00
	“ “ “ “	665.00
Sept. 2.	Illinois Central R. R. dividend	132.00
8.	Portland & Ogdensburg R. R. dividend	25.00
15.	Chicago, Burlington & Quincy	900.00
21.	B. D. Hill, for pasturing	25.00
		<hr/>
		\$2,668.50

They have paid—

Aug. 19.	C. S. Cartland, for services	\$15.00
Sept. 15.	C. S. Clifford, for copies	3.00
	Town of Durham, taxes	254.10
	City of Dover, “	1,134.00
21.	B. D. Hill, for work on farm	9.00
22.	W. L. Foster, services (legal) since settlement	140.33
		<hr/>
	<i>Amount carried forward</i>	\$1,555.43

<i>Amount brought forward</i>	\$1,555.43
Sept. 22. J. G. Hall, services (legal) since settlement	50.00
For services as executors since settlement, including services and expenses at Concord	200.00
	<hr/>
	\$1,805.43
Reserved by the executors for the purpose of erecting a monument to the memory of Benjamin Thompson at his grave in Durham, and for keeping in repair the same and the grave and lot connected therewith	863.07
	<hr/>
	\$2,668.50

OFFICE OF STATE TREASURER,

CONCORD, N. H., Sept. 22, 1891.

Received of James F. Joy and Elisha R. Brown, executors, the proceeds of the estate of the late Benjamin Thompson, in accordance with the foregoing schedule.

THE STATE OF NEW HAMPSHIRE,

By SOLON A. CARTER,

State Treasurer.

The following is a schedule of the estate of Benjamin Thompson, late of Durham, N. H., bequeathed to the State of New Hampshire and accepted. (See chapter 12, Pamphlet Laws of 1891.)

REAL ESTATE.

Warner farm in Durham	\$15,000.00
House in Durham	1,800.00
Lot on south side river in Durham	200.00
One eighth interest in Oyster river building	100.00
Wood lot in Nottingham	1,200.00
	<hr/>

Total real estate (in Durham \$17,100) \$18,300.00

Bonds (see list, page 188)	60,795.00
Bank stocks (see list, page 188)	40,093.00
	<hr/>

Amount carried forward \$100,888.00

<i>Amount brought forward</i>	.	.	.	\$100,888.00
Railroad stocks (see list, page 189)	.	.	.	249,048.00
Manufacturing stocks (see list, page 189)	.	.	.	9,291.00
Land stocks	.	.	.	125.00
Deposit Strafford National Bank	.	.	.	14,172.74
Deposit Strafford Savings Bank	.	.	.	15,948.47
Cash	.	.	.	215.00
Household furniture	.	.	.	232.50
Farming utensils	.	.	.	132.25
Pew in Congregational church	.	.	.	40.00
Also certain items (see pages 189-190) in- voiced "no present value."				

Total appraised value of estate	.	.	.	\$408,392.96
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From the amount of the appraised value are to be deducted the following items, to wit :

Real estate in Durham	.	.	.	.	\$17,100.00
Funeral expenses	.	.	.	.	221.00
Claims for last sickness	.	.	.	.	106.00
Sundry debts	.	.	.	.	548.00
Expenses administration	.	.	.	.	5,155.05
Sundry legacies	.	.	.	.	5,512.50
Executors' commissions	.	.	.	.	9,752.32
" "	.	.	.	.	1,000.00
" "	.	.	.	.	1,000.00
Executors' services	.	.	.	.	200.00
Rates and taxes	.	.	.	.	1,427.77
" "	.	.	.	.	1,388.10
Counsel fees	.	.	.	.	190.33
Monument and care of lot	.	.	.	.	863.07
C. S. Cartland, services	.	.	.	.	15.00
B. D. Hill, "	.	.	.	.	9.00
<i>Amount carried forward</i>	.	.	.	.	\$44,488.14

<i>Amount brought forward</i>	.	.	.	\$44,488.14
C. S. Clifford, copies	.	.	.	\$3.00
Expenses of probate in Massachusetts paid				
by State	.	.	.	78.50
				<hr/>
Total deductions	.	.	.	\$44,569.64
Total appraisal	.	.	.	\$408,392.96
Deductions	.	.	.	44,569.64
				<hr/>
Net estate received from the executors,				\$363,823.32

which is the amount with which the State is chargeable and which is the principal of the Benjamin Thompson Trust Fund.

The executors transferred to the state treasurer in current funds the sum of \$41,894.27, which was the balance remaining in their hands after all claims upon the estate had been adjusted.

In obtaining a complete title to some of the certificates of stock in foreign corporations for the State of New Hampshire, it became necessary to institute proceedings in the Probate court of Suffolk county, Massachusetts, the expense of which, amounting to the sum of \$78.50, was paid by the State and charged to the estate in the foregoing computation, it being essentially a part of the expense of administration.

The sum transferred by the executors to the State, included the income of the estate, from the death of the testator (Jan. 30, 1890) to the date of transfer to the State (Sept. 22, 1891).

It became necessary in the adjustment of the account to separate the cash receipts of the executors into three classes, viz. : principal, income, and profit and loss.

The following memorandum exhibits the cash and

cash items pertaining to the principal of the estate for which the executors were chargeable :

Cash	\$215.00
Deposit in Strafford National Bank	14,172.74
Deposit in Strafford Savings Bank	15,948.47
Cash for bonds matured and paid	4,000.00
Farming utensils sold, appraised	132.25

Total cash receipts by executors on account of principal	\$34,468.46
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The following items paid by executors, including \$78.50, expenses of probate proceedings in Massachusetts, are chargeable to the principal of the estate, to wit :

Funeral expenses	\$221.00
Claims on account last sickness	106.00
Debts	548.00
Legacies, cash	300.00
Expenses of administration	5,155.05
Rates and taxes	2,815.87
Investments (see page 202)	2,253.76
Executors' commissions	9,752.32
“ “	1,000.00
“ “	1,000.00
“ services	200.00
Monument and care of lot	863.07
Counsel fees	190.33
C. S. Clifford, copies	3.00
C. S. Cartland, services	15.00
B. D. Hill, labor	9.00
Expenses probate in Massachusetts	78.50

Total cash payments from principal	\$24,510.90
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Balance cash (principal) received from executors \$9,957.56

The following statement exhibits the condition of the estate received from the executors September 22, 1891 :

Real estate in Nottingham.	\$1,200.00
Bonds, appraised	\$60,795
Matured and paid	4,000
	<hr/> 56,795.00
Bank stocks, appraised	\$40,093
Lucetta M. Davis legacy	2,340
	<hr/> 37,753.00
Railroad stocks, appraised	\$249,048
Cong. Society, Durham legacy	2,640
	<hr/> 246,408.00
Manufacturing stocks, appraised	9,291.00
Land stocks, "	125.00
Pew in Cong. church, "	40.00
Investments (see page 202)	2,253.76
Cash	9,957.56
	<hr/>
Total estate as received (see page 215)	\$363,823.32

In addition to the above items the executors delivered to the state treasurer :

5 shares Oyster River Creamery (no certificate).

\$1,100 State of Virginia scrip.

30,000 South Carolina non-fundable bonds.

2,200 Consolidated Debt of Virginia.

500 First Con. Mort. Bond Ogdensburg and Lake Champlain R. R.

500 Income Bond Ogdensburg and Lake Champlain R. R.

Also 23 shares Boston & Maine R. R. stock, received by executors as a stock dividend.

The foregoing computations and statement of adjustment have been submitted to his excellency the governor and the honorable council, the attorney-general, and the president of the board of trustees of the New Hampshire College of Agriculture and the Mechanic Arts, and their certificates of approval have been made a part of the record, and are as follows :

CERTIFICATE OF GOVERNOR AND COUNCIL.

THE STATE OF NEW HAMPSHIRE,
COUNCIL CHAMBER, April 5, 1892.

The undersigned have carefully examined the computations made by the state treasurer, in the adjustment of the Benjamin Thompson estate, as shown on pages 54 to 57, inclusive, of this volume (Journal Benj. Thompson Fund, state treasurer's office) and hereby certify that in our judgment said computations are correct and in accordance with the terms of the will of said Thompson and the provisions of chapter 12, Pamphlet Laws of 1891, entitled, "An act to accept the provisions of the Thompson will and to provide for the present disposition of the funds," and that we find that the "amount of the appraised value of the estate received by the state by virtue of said Thompson's will," which amount constitutes the "Benjamin Thompson Trust Fund," as provided by section 4 of said act, is three hundred and sixty-three thousand, eight hundred and twenty-three dollars and thirty-two cents (\$363,823.32).

(Signed) HIRAM A. TUTTLE,
Governor.

JAMES FARRINGTON,
HENRY B. QUINBY,
GEO. A. RAMSDELL,
JOHN M. WHIPPLE,
EDWIN C. LEWIS,
Executive Council.

CERTIFICATE OF ATTORNEY-GENERAL.

I hereby certify that I have examined the foregoing computations by the state treasurer and approve the same.

(Signed) EDWIN G. EASTMAN,
Attorney-General.

At a meeting of the trustees of the New Hampshire College of Agriculture and the Mechanic Arts, held in Culver hall, Hanover, April 19, 1892, it was

Resolved, That the president be authorized and instructed to examine the books of the treasurer of the state in which the account of the fund from the estate of Benjamin Thompson is kept, and if he finds such account satisfactorily stated, to certify his approval thereof in behalf of the New Hampshire College of Agriculture and Mechanic Arts.

CERTIFICATE OF THE PRESIDENT, ETC.

CONCORD, May 12, 1892.

In accordance with the foregoing resolution, I hereby certify that I have critically examined the accounts of the state treasurer pertaining to the Benjamin Thompson Trust Fund and approve the same.

(Signed) LYMAN D. STEVENS,

President.

In behalf of the N. H. College of Agriculture
and the Mechanic Arts.

THE BENJAMIN THOMPSON TRUST FUND.

Principal	\$363,823.32
One year's interest on principal at 4 per cent	14,552.93
	<hr/>
New principal, Jan. 30, 1891	\$378,376.25
One year's interest on principal at 4 per cent	15,135.05
	<hr/>
New principal, Jan. 30, 1892	\$393,511.30

THE BENJAMIN THOMPSON STATE TRUST FUND.

Appropriation, Jan. 30, 1891	\$3,000.00
One year's interest on principal at 4 per cent	120.00
Appropriation, Jan. 30, 1892	3,000.00
	<hr/>
	\$6,120.00
One year's interest on principal at 4 per cent	244.80
	<hr/>
New principal, Jan. 30, 1892	\$6,364.80

SUMMARY.

The original amount of the Benjamin Thompson Trust Fund (see items, page 217) was \$363,823.32
 Including cash \$9,957.56

Accounted for as follows :

Paid balance of subscription (90 per cent) for 18 shares of new stock of the Boston & Albany R. R. at par, and carried in assets at cost	1,620.00	
Transferred to state treasury		8,337.56
Balance of the estate at original appraisal reported in assets (see page 241) .		\$355,485.76
The income of the estate to Jan. 30, 1892, amounted to \$38,547.50		
The gain on farming utensils, appraised at \$132.25, sold for \$142.06	9.81	
Transferred to state treasury		\$38,557.31
The State is chargeable with interest on the fund for two years to Jan. 30, 1892 .		29,687.98
Excess of income and profit and loss over interest charges for the first two years of the twenty year term of the trust . .		\$8,869.33

DETAILED STATEMENT OF RECEIPTS AND
DISBURSEMENTS.

RECEIPTS.

Cash in treasury June 1, 1891 . . . \$311,819.08

STATE TAX OF 1890.

Livermore (balance) . . . \$92.64

STATE TAX OF 1891.

As per table in appendix (pages 254-261) \$500,000.00

INSURANCE TAX, 1891.

Foreign Life Companies.

Ætna	\$360.98
Connecticut General	68.35
Connecticut Mutual	286.15
Equitable Life Assurance So-	
ciety	266.47
Hartford Life and Annuity	26.93
Manhattan	37.49
Massachusetts Mutual	1,096.89
Metropolitan	647.22
Mutual Benefit	140.64
Mutual	1,909.47
National	353.29
New England Mutual	16.46
New York	360.61
Northwestern Mutual	369.97
Penn Mutual	264.21
Phœnix Mutual	352.11
Provident Savings	22.43

Amounts carried forward \$6,579.67 \$811,911.72

<i>Amounts brought forward</i>		\$6,579.67	\$811,911.72
State Mutual		83.36	
Travelers'		381.04	
Union Mutual		117.44	
United States		19.00	
Washington		21.50	
		<hr/>	\$7,202.01

Foreign Fire Insurance Companies.

Ætna Insurance Co. . . .	\$284.32
American Insurance Co. of Bos- ton . . . . .	.35
American Insurance Co. of New- ark	14.79
American Fire Insurance Co. of New York	279.18
British America Assurance Co.	20.84
California Insurance Co. . . .	61.82
Caledonian Insurance Co. . . .	10.09
City of London	30.37
Commercial Union	84.19
Continental	44.50
Dwelling House	19.08
Fire Association of Philadelphia	36.55
Fireman's Fund	75.12
Fitchburg Mutual	130.21
Guardian Assurance Co. . . .	62.75
Hamburg Bremen	49.27
Hartford Fire Insurance Co. . .	56.87
Imperial Fire Insurance Co. . .	35.72
Insurance Co. of North America	189.59
Liverpool & London & Globe . .	86.49
London & Lancashire	183.56

<i>Amounts carried forward</i>	\$1,755.66	\$819,113.73
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<i>Amounts brought forward</i>		\$1,755.66	\$819,113.73
Massachusetts Mutual . . .	72.85		
Merchants and Farmers' Mutual	21.82		
Michigan Fire and Marine . .	14.04		
National Fire Insurance Co. .	71.61		
North British and Mercantile .	67.11		
Northern Assurance Co. . . .	76.62		
Norwich Union Fire Insurance Society	37.38		
Orient Insurance Co.	64.73		
Phenix Insurance Co.	125.07		
Phenix Assurance Co.	93.36		
Pennsylvania Fire Insurance Co.	79.19		
Providence Washington	44.28		
Queen Insurance Co. (America)	26.29		
Queen (Liverpool)	100.02		
Royal Insurance Co.	172.55		
Springfield Fire and Marine . .	71.01		
Sun Fire Office	91.91		
Traders and Mechanics' Mutual	56.83		
Manchester (Eng.)	39.60		
Mechanics and Traders'	33.48		
Mercantile Fire and Marine . .	12.86		
Niagara	11.98		
Western Assurance Co.	4.68		
			\$3,144.93

Miscellaneous Foreign Companies.

American Casualty	\$281.20
American Surety	11.85
American Employers' Liability	3.60
Fidelity and Casualty	47.65
Guarantee Co. of North America	5.12

<i>Amounts carried forward</i>	\$349.42	\$822,258.66
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<i>Amounts brought forward</i>	\$349.42	\$822,258.66
Hartford Steam Boiler Insurance and Inspection Company	89.35	
Standard Life and Accident	37.47	
Employers' Liability	52.20	
Lloyd's Plate Glass	4.31	
	<hr/>	\$532.75

Home Stock Companies.

Capital Fire Insurance Co.	\$1,000.00	
Fire Underwriters' Association	100.00	
Granite State	2,000.00	
New Hampshire	6,000.00	
Peoples	3,500.00	
Portsmouth Fire Association	500.00	
State Dwelling House Ins. Co.	150.00	
	<hr/>	\$13,250.00

SAVINGS-BANK TAX OF 1891.

As per table in appendix (pages 250-252) \$698,799.16

RAILROAD TAX OF 1891.

As per table in appendix (page 248) . \$283,042.72

TAX ON TELEGRAPH COMPANIES FOR 1891.

As per table in appendix (page 249) . \$2,697.33

TAX ON TELEPHONE COMPANIES FOR 1891.

As per table in appendix (page 249) . \$2,109.06

INTEREST.

Interest on deposits	\$5,061.07	
Income Benj. Thompson estate	38,547.50	
	<hr/>	\$43,608.57

Amount carried forward . . . \$1,866,298.25

Amount brought forward. . . \$1,866,298.25

FEES, INSURANCE DEPARTMENT.

John C. Linehan, commissioner . . . \$6,529.60

EXPENSES OF RAILROAD COMMISSIONERS.

Assessments by board of equalization on
railroad corporations for expenses of
board from June 1, 1890, to June 1,
1891, as per table in appendix (page
248) \$7,424.03

LICENSE FEES, PEDDLERS.

Rockingham county . . .	\$100.00	
Strafford county . . .	100.00	
Belknap county . . .	75.00	
Carroll county . . .	100.00	
Merrimack county . . .	125.00	
Hillsborough county . . .	425.00	
Cheshire county . . .	25.00	
Grafton county . . .	100.00	
	<hr/>	\$1,050.00

LICENSE FEES FERTILIZERS.

J. A. Tucker & Co., license dated March 9, 1891 . . .	\$50.00	
Ames Fertilizer Co., license dated March 31, 1891 . . .	50.00	
Standard Fertilizer Co., license dated May 19, 1891 . . .	50.00	
Cumberland Bone Co., license dated June 2, 1891 . . .	50.00	
	<hr/>	
<i>Amounts carried forward</i>	\$200.00	\$1,881,301.88

<i>Amounts brought forward</i>	\$200.00	\$1,881,301.88
Williams & Clark Fertilizer Co., license dated May 19, 1891	50.00	
Allen Fertilizer Co., license dated April 22, 1892	50.00	
Bradley Fertilizer Co., license dated Nov. 17, 1891	50.00	
Standard Fertilizer Co., license dated May 19, 1892	50.00	
Cumberland Bone Phosphate Co., license dated Oct. 20, 1891	50.00	
Quinnipiac Co., license dated Feb. 1, 1892	50.00	
Cleveland Dryer Co., license dated Feb. 10, 1892	50.00	
Williams & Clark Fertilizer Co., license dated May 19, 1892	50.00	
Pacific Guano Co., license dated Dec. 17, 1891	50.00	
Clark's Cove Fertilizer Co., license dated Oct. 24, 1891 . .	50.00	
E. Frank Coe, license dated Feb. 4, 1892	50.00	
Lister's Agricultural and Chemical Works, license dated Dec. 31, 1891	50.00	
L. B. Darling Fertilizer Co., license dated April 1, 1892 . .	50.00	
Bellamy Bone Mill, license dated April 15, 1892	50.00	
<i>Amounts carried forward</i>	\$900.00	\$1,881,301.88

<i>Amounts brought forward</i>	\$900.00	\$1,881,301.88
J. A. Tucker & Co., license dated March 9, 1892 . . .	50.00	
Crocker Fertilizer and Chemical Co., license dated May 3, 1892	50.00	
Bowker Fertilizer Co., license dated May 9, 1892 . . .	50.00	
	<hr/>	\$1,050.00

CHARTER FEES VOLUNTARY CORPORATIONS.

The United States No Interest Building Society . . .	\$10.00	
The United Fire Insurance Co.	10.00	
The Postal District Messenger Co.	300.00	
Boston Photgraveure Co. . .	100.00	
American Live Stock Insurance Co.	50.00	
Manhattan Fire Insurance Co.	10.00	
Home Builders Union . . .	10.00	
Boston Fire and Police Notifica- tion Co.	20.00	
	<hr/>	\$510.00

STATE NOTES.

Temporary loan	\$100,000.00
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STATE BONDS.

Library loan, 4 per cent bonds . . .	\$175,000.00
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PREMIUM ON BONDS.

Premium on Library loan, sold at 110.9 .	\$19,075.00
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<i>Amount carried forward</i> . . .	<hr/> \$2,176,936.88
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Amount brought forward . . . \$2,176,936.88

SOLDIERS' HOME.

The United States (support of home) . . . \$3,393.89

UNCLAIMED SAVINGS-BANK DEPOSITS.

Edgar H. Woodman and Samuel F. Brown, assignees Penacook Savings Bank . . .	\$256.11	
John E. Robertson, assignee Concord Savings Bank . . .	648.81	
	<hr/>	\$904.92

SALE OF OLD FENCE, LIBRARY LOT.

Miss S. Perkins \$40.00

SALE OF SHEETS, PUBLIC STATUTES.

Edson C. Eastman (1,200 sets at \$1.06) . . . \$1,272.00

BOARD OF REGISTRATION, DENTISTRY.

Edward B. Davis, secretary (fees collected) \$89.50

BENJAMIN THOMPSON'S ESTATE.*

Cash balance	\$8,337.56	
Profit and loss (farming utensils sold)	9.81	
	<hr/>	\$8,347.37
Total receipts		<hr/> \$2,190,984.56

*The income of the estate for the two years to Jan. 30, 1892, amounting to \$38,547.50, is accounted for under the head of *Interest*, page 224.

DISBURSEMENTS.

EXECUTIVE DEPARTMENT.

Governor's salary . . .	\$2,000.00	
Honorable Council . . .	2,283.20	
Printing blanks, etc. . .	143.81	
Incidental expenses . . .	114.47	
Contingent fund . . .	454.84	
	<hr/>	\$4,996.32

SECRETARY'S DEPARTMENT.

Salary of secretary . . .	\$828.89	
Salary of deputy secretary . .	600.00	
Indexing records (special ap- propriation) . . .	1,292.50	
Printing blanks, etc. . .	595.90	
Printing inventories . . .	1,438.52	
Incidentals . . .	1,218.19	
	<hr/>	\$5,974.00

TREASURY DEPARTMENT.

Salary of treasurer . . .	\$1,800.00	
Salary of deputy treasurer . .	950.00	
Clerical expenses . . .	1,000.00	
Printing report . . .	272.69	
Printing blanks . . .	303.07	
Auditing treasurer's accounts .	200.00	
Incidentals . . .	391.60	
Compiling financial statistics .	200.00	
	<hr/>	\$5,117.36

ADJUTANT-GENERAL'S DEPARTMENT.

Salary of adjutant-general . .	\$1,000.00	
Printing report . . .	294.70	
	<hr/>	
<i>Amounts carried forward</i>	\$1,294.70	\$16,087.68

<i>Amounts brought forward</i>	\$1,294.70	\$16,087.68
Printing blanks	463.80	
Clerk	500.00	
Incidentals	286.42	
Publication military records	2,963.55	
	<hr/>	\$5,508.47

DEPARTMENT OF PUBLIC INSTRUCTION.*

Salary of superintendent	\$2,500.00	
Clerk	500.00	
Printing report	1,252.17	
Printing blanks, etc.	571.80	
Incidentals	279.08	
	<hr/>	\$5,103.05

INSURANCE DEPARTMENT.

Salary of commissioner	\$2,000.00	
Printing report	1,247.09	
Printing blanks	628.20	
Incidentals	471.12	
Expenses of commissioner	135.00	
Office expenses	663.09	
Clerk	625.00	
	<hr/>	\$5,769.50

SUPREME COURT.

Salary of justices	\$23,300.00	
Salary of attorney-general	1,711.11	
Salary of state reporter	933.34	
Clerks of supreme court	834.20	
Incidentals	423.69	
N. H. Reports (vol. 65)	1,050.00	
	<hr/>	
<i>Amounts carried forward</i>	\$28,252.34	\$32,468.70

*For expenses teachers' institutes, see *Miscellaneous Items*, page 239.

STATE TREASURER'S REPORT.

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<i>Amounts brought forward</i>	\$28,252.34	\$32,468.70
Incidentals (reporter)	23.10	
Printing blanks (attorney-general)	27.77	
	<hr/>	\$28,303.21

PROBATE COURT.

Salaries of judges	\$5,947.23	
Salaries of registers	6,941.10	
	<hr/>	\$12,888.33

STATE LIBRARY.

Salary of librarian	\$1,000.00	
Assistants	249.00	
Increase library	3,037.02	
Printing report	976.64	
Printing blanks	167.17	
Reprints	472.09	
Incidentals	437.95	
Printing 300 bank com. reports	272.43	
Expenses trustees	14.90	
	<hr/>	\$6,627.20

STATE HOUSE.

Salary of janitor	\$650.00	
Watchmen	1,300.00	
Gas	717.64	
Water	125.00	
Fuel	722.58	
Furniture	1,029.58	
Repairs	1,029.10	
Miscellaneous	437.52	
	<hr/>	\$6,011.42
<i>Amount carried forward</i>		\$86,298.86

Amount brought forward, . . . \$86,298.86

NEW HAMPSHIRE ASYLUM FOR THE INSANE.

Support of indigent insane . . .	\$6,000.00	
Support of convict insane . . .	4,499.97	
Printing report . . .	499.05	
Special appropriation . . .	6,300.00	
Asylum library (3 years) . . .	300.00	
	<hr/>	\$17,599.02

EDUCATION OF DEAF AND DUMB.

American Asylum, Hartford . . .	\$1,978.35	
Clark Institution, Northampton . . .	1,312.50	
City of Boston (Horace Mann School)	52.50	
	<hr/>	\$3,343.35

EDUCATION OF THE BLIND.

Perkins Institution, Boston . . .	\$2,850.00	
Edith H. Carter (O'Neil child) . . .	4.00	
Isabel Greeley (O'Neil child) . . .	7.45	
	<hr/>	\$2,861.45

INDUSTRIAL SCHOOL.

Current expenses . . .	\$6,000.00	
Special appropriation . . .	4,000.00	
Printing blanks . . .	12.79	
	<hr/>	\$10,012.79

STATE PRISON.

Salary of warden . . .	\$1,500.00	
Salary of chaplain . . .	800.00	
Prisoners' Aid Association . . .	21.00	
	<hr/>	
<i>Amounts carried forward</i>	\$2,321.00	\$120,115.47

<i>Amounts brought forward</i>	\$2,321.00	\$120,115.47
Printing report . . .	159.23	
Printing blanks . . .	12.39	
Balance current expenses .	2,050.20	
Repairs (special appropriation)	3,971.23	
Land " "	2,000.00	
Prison library . . .	285.90	
	<hr/>	\$10,799.95

N. H. COLLEGE OF AGRICULTURE AND
MECHANIC ARTS.

Appropriation . . .	\$3,000.00	
Removal . . .	25,000.00	
	<hr/>	\$28,000.00

NORMAL SCHOOL.

Annual appropriation . .	\$7,000.00	
Apparatus (special app'n)	5,000.00	
Flag " "	200.00	
Special appropriation (buildings) . . .	24,363.11	
Expenses of trustees . .	260.48	
Printing report . . .	149.49	
	<hr/>	\$36,973.08

FISH COMMISSIONERS.

Expenses of commissioners .	\$3,133.30	
Printing report . . .	75.99	
Printing blanks . . .	99.74	
Colebrook hatching-house (special appropriation) . .	729.45	
Laconia hatching-house (special appropriation) . .	24.00	
	<hr/>	
<i>Amounts carried forward</i>	\$4,062.48	\$195,888.50

<i>Amounts brought forward</i>	\$4,062.48	\$195,888.50
Bristol hatching-house (special appropriation)	53.35	
Cheshire county hatching-house (special appropriation)	148.96	
Ashland hatching-house (special appropriation)	60.00	
Game detectives	214.10	
	<hr/>	\$4,538.89

RAILROAD COMMISSIONERS.

Salaries and expenses of board*	\$5,468.99	
Printing blanks	162.17	
	<hr/>	\$5,631.16

BANK COMMISSIONERS.

Printing report	\$1,679.73	
Printing blanks	201.61	
Compensation, etc. . . .	7,890.62	
Incidentals	244.43	
	<hr/>	\$10,016.39

NEW HAMPSHIRE NATIONAL GUARD.

New Hampshire National Guard (regular appropriation)	\$29,998.17
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BOARD OF AGRICULTURE.

Salary of secretary	\$1,125.00	
Expenses of board	1,194.13	
Printing blanks, etc. . . .	226.44	
Incidentals	100.74	
	<hr/>	\$2,646.31

Amount carried forward \$248,719.42

*This item is not included in statement of expenses, but is reported in assets as a claim upon the railroad corporations. (See chapter 165, section 7, Public Statutes.)

Amount brought forward . . . \$248,719.42

WHITE MOUNTAIN ROADS.

Dixville (winter road) . . .	\$120.25	
Dixville	180.25	
Sandwich Notch in Sandwich .	332.99	
Millsfield road	155.00	
Errol Dam and Wentworth's		
Location	200.00	
Errol	200.00	
Randolph	500.00	
Sandwich Notch in Thornton .	75.00	
Deer Neck bridge	300.00	
Wentworth's Location . . .	74.95	
Dummer	150.00	
Breezy Point and Warren .	200.00	
Kearsarge	300.00	
Woodstock	125.00	
North and South road in Benton	150.00	
Willey and Bartlett	258.00	
Waterville	99.00	
Bridgewater	150.00	
Peterborough and Temple .	3,000.00	
Warren road in Woodstock .	225.00	
Cherry Mountain road in Car-		
roll	186.00	
	<hr/>	\$6,981.44

ABATEMENT OF TAXES, 1891.

Green's Grant \$115.63

BOARD OF EQUALIZATION.

Salary of secretary . . .	\$600.00	
Expenses of board	285.06	
	<hr/>	
<i>Amounts carried forward</i>	\$885.06	\$255,816.49

<i>Amounts brought forward</i>	\$885.06	\$255,816.49
Printing report . . .	165.65	
Printing blanks . . .	15.85	
	<hr/>	\$1,066.56

BOUNTY ON WILD ANIMALS, ETC.

Bounty on 110 bears, at \$10 .	\$1,100.00	
Bounty on 1 wildcat, . . .	1.00	
	<hr/>	\$1,101.00

STATE BOARD OF HEALTH.

Salary of secretary . . .	\$2,500.00	
Clerk	500.00	
Expenses of board . . .	586.88	
Incidentals	371.54	
Printing report . . .	1,529.67	
Printing blanks, registration .	962.59	
Printing blanks	507.85	
	<hr/>	\$6,958.53

STATE HISTORIAN.

Compensation, etc.	\$634.45	
Incidentals	97.41	
Printing blanks	13.20	
	<hr/>	\$745.06

BOARD OF REGISTRATION, DENTISTRY.

Expenses	\$72.82
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LEGISLATURE.

Clerk of Senate	\$337.50	
Clerk of House	412.50	
Printing journals	2,840.65	
	<hr/>	
<i>Amounts carried forward</i>	\$3,590.65	\$265,760.46

<i>Amounts brought forward</i>	\$3,590.65	\$265,760.46
Printing Pamphlet Laws	1,245.17	
Printing Public Statutes	5,057.17	
Printing combined reports	1,741.67	
Publishing Laws	5,638.80	
Reporters *	100.00	
Clerks of Senate and House*	388.00	
Incidentals	3.70	
	<hr/>	\$17,765.16

STATE LIBRARY BUILDING.

Land and construction to date	\$78,421.98
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THE BENJAMIN THOMPSON ESTATE.

Incidentals	\$65.00
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CONTAGIOUS DISEASES (CATTLE).

Sundry bills paid	\$6,631.53
City of Manchester (by joint resolution)	138.50
	<hr/>
	\$6,770.03

BOUNDARY SURVEY (MASS.).

Expense of survey	\$4,530.46
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SOLDIERS' HOME.†

Bills for year	\$13,729.78
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INSURANCE TAX OF 1891.

To towns as per table in appendix (pages 254-261)	\$9,511.50
	<hr/>
<i>Amount carried forward</i>	\$396,554.37

* By joint resolution. † See remarks, pages 174, 175.

Amount brought forward . . . \$396,554.37

SAVINGS-BANK TAX OF 1891.

To towns as per table in appendix (pages 254-261) . \$624,362.87
 To literary fund . . . 74,436.29

 \$698,799.16

RAILROAD TAX OF 1891.

To towns as per table in appendix (pages 254-261)* . . . \$159,675.09

PRINCIPAL OF DEBT.

Bonds, municipal war loan,
 due Jan. 1, 1892 . . . \$197,000.00
 State note (temporary loan) 100,000.00
 Bonds, series 1879, due July
 1, 1891 . . . 100,000.00

 \$397,000.00

INTEREST.

Interest on Fisk legacy . \$1,582.70
 Interest on surplus revenue . 11.73
 Interest on Kimball legacy . 405.21
 Coupons on bonds, and interest on registered bonds . 141,309.00
 Interest on Agricultural college fund . . . 4,800.00
 Interest on State notes . 1,388.88

 \$149,497.52

INDEPENDENT MILITIA.

Amoskeag Veterans . . \$100.00
 Manchester War Veterans . 100.00

 Amounts carried forward \$200.00

\$1,801,526.14

* See remarks, page 173.

<i>Amounts brought forward</i>	\$200.00	\$1,801,526.14
Manchester Cadets . . .	100.00	
Lafayette Artillery Company	100.00	
	<hr/>	\$400.00

COMMISSIONERS OF LUNACY.

Expenses of commission .	\$1,052.39	
Maintenance of insane .	12,388.66	
	<hr/>	\$13,441.05

COMMISSIONERS OF PHARMACY.

Expenses of commissioners . . .		\$379.50
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COMMISSIONER OF IMMIGRATION.

Expenses of commissioner (including printing and postage) . . .		\$4,613.63
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FORESTRY COMMISSION.

Expenses of commission . . .		\$12.75
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COMMISSION ON REVISION OF LAWS.

Incidentals		\$19.30
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MISCELLANEOUS.

Idiotic and feeble-minded .	\$1,564.60	
Auditing printer's accounts .	286.00	
Teachers' institutes . . .	2,260.33	
Plans (State Library) . . .	420.00	
Advertising other than laws	110.58	
Lighting Weirs channel . .	468.15	
Lake Sunapee, lights and buoys	397.08	
	<hr/>	

Amounts carried forward \$5,506.74 \$1,820,392.37

Amounts brought forward \$5,506.74 \$1,820,392.37

Granite State Dairymen's		
■ Association . . .	500.00	
Unclaimed savings-bank de-		
posits	186.13	
N. H. Historical Society		
(regular)	500.00	
N. H. Historical Society		
(special)	500.00	
Regimental histories . .	2,610.00	
Ray & Walker's citations .	3,625.00	
Morrison's Digest . .	3,239.55	
War Album	100.00	
Gen. Stark's portrait . .	132.10	
Damage to sheep, etc., by		
dogs	897.35	
Gettysburg monuments .	1,000.00	
Bennington monument (ded-		
ication)	3,500.00	
Matthew Thornton monu-		
ment	1,000.00	
Printing bonds	299.00	
Endicott rock (preservation		
of)	824.90	
Chicago Exposition . .	891.70	
Library commission . .	60.61	
	<hr/>	\$25,373.08
Total disbursements		<hr/> \$1,845,765.45

FUNDED DEBT.

The bonds now outstanding, and dates of their maturity, are as follows :

Bond of 1873, due July 1, 1879 . . .	\$500.00
Municipal war loan bonds, due from January 1, 1892, to January, 1905 . . .	2,009,100.00
Bonds of 1879, due July 1, 1892 . . .	100,000.00
Library loan, due July 1, 1911 . . .	175,000.00
Total funded debt	<u>\$2,284,600.00</u>

STATE OF THE TREASURY JUNE 1, 1892.

LIABILITIES.

Floating debt	\$100.00
Trust funds (see page 172)	572,903.03
Funded debt (see above)	2,284,600.00
Due towns, account Manchester & Keene Railroad tax, 1890 and 1891 * . . .	745.65
Due towns, account Whitefield & Jefferson Railroad tax of 1891 * . . .	434.75
Building and Loan Association tax † . . .	250.43
Total liabilities	<u>\$2,859,033.86</u>

ASSETS.

Cash in treasury	\$345,219.11
Benjamin Thompson estate. Securities at appraisal, as per inventory (see pages 217 and 220)	355,485.76
<i>Amount carried forward</i>	<u>\$700,704.87</u>

* See remarks, page 173. † See remarks, page 174.

<i>Amount brought forward</i>	. . .	\$700,704.87
Expenses railroad commissioners from June 1, 1891, to June 1, 1892, and due from the railroad corporations agreeably to the provisions of chapter 155, Public Statutes		5,468.99
Due from United States on account Sol- diers' Home, for quarter ending June 30, 1891		956.11
		<hr/>
Total assets June 1, 1892 . . .		\$707,129.97
Deficiency, being net indebtedness June 1, 1892		\$2,151,903.89

DEPOSITS BY RAILROAD CORPORATIONS FOR LAND DAMAGES.

There have been no transactions during the year.

Balance in treasurer's hands June 1, 1892, being the same as reported June 1, 1891	\$3,306.50
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In Appendix will be found :

Page 247. The Assessment of the Tax on the Chartered Stock Fire Insurance Companies of New Hampshire.

Page 248. The Assessments on Railroad Corporations.

Page 249. The Assessments on Telegraph and Telephone Companies.

Pages 250-252. The Assessments on Savings Banks and Trust Companies.

Page 253. Memoranda explaining distribution of Savings-Bank Tax.

Pages 254-261. The Distribution of Insurance, Railroad, and Savings-Bank Taxes, and Literary Fund, and the Assessment of State Tax.

Pages 264-282. Financial Statistics.

SOLON A. CARTER,
Treasurer.

AUDITORS' REPORT.

CONCORD, N. H., May 31, 1892.

To His Excellency the Governor and Honorable Council:

We have examined the treasurer's accounts from June 1, 1891, to May 31, 1892, inclusive, as shown by the foregoing report, and find—

Cash on hand June 1, 1891 . . .	\$311,819.08
Receipts to June 1, 1892 . . .	1,879,165.48
Total	<u>\$2,190,984.56</u>
Expenditures	<u>1,845,765.45</u>
Cash in treasury	\$345,219.11

All payments are duly authorized and properly vouched.

The committee are glad to testify to the admirable methods adopted by Colonel Carter in all the departments of the State treasury, the accuracy which marks all his accounts and the untiring fidelity he has shown in the discharge of his duties. We also improve the opportunity to say that an examination of the extended accounts of the department, satisfies us of the wisdom of the Legislature of 1891, in providing for the appointment of an assistant; and our acquaintance with Maj. Hiram F. Gerrish in connection with the details of the business of the office, fully justifies Colonel Carter in the choice he has made of a deputy treasurer.

GEORGE E. KENT, *Accountant.*

GEORGE A. RAMSDELL,

EDWIN C. LEWIS,

JOHN M. WHIPPLE,

Committee of the Council.

APPENDIX.

APPENDIX.

TABULAR STATEMENT

Showing the number of shares in the various chartered stock insurance companies in the State, April 1, 1891, the amount of tax paid by them, the amount distributed to the several cities and towns, and the balance accruing as revenue to the State.

CORPORATIONS.	Shares.	Tax.	To towns.	To State.
Capital Fire Insurance Company	1,000	\$1,000.00	\$735.00	\$265.00
Fire Underwriters Association.....	100	100.00	71.25	28.75
Granite State Fire Insurance Co.....	2,000	2,000.00	1,474.50	525.50
New Hampshire Fire Insurance Co...	6,000	6,000.00	4,226.25	1,773.75
Peoples Fire Insurance Company	3,500	3,500.00	2,517.00	983.00
Portsmouth Fire Association.....	500	500.00	375.00	125.00
State Dwelling-House Insurance Co.	150	150.00	112.50	37.50
Totals.....	13,250	\$13,250.00	\$9,511.50	\$3,738.50

TABULAR STATEMENT

Showing the assessment of railroad taxes for 1891, the amount distributed to the several cities and towns, and the balance accruing as revenue to the State; also assessments on account expenses railroad commissioners to June 1, 1891.

CORPORATIONS.	Tax assessed.	To towns.	To State.	Expens- es R. R. Com.
Grand Trunk.....	\$6,935.28	\$1,733.82	\$5,201.46	\$315.35
Boston & Maine.....	37,142.97	12,840.27	24,302.70	a 3,104.29
Concord & Montreal.....	81,243.27	64,725.25	16,518.02	b 2,706.81
Concord & Claremont.....	8,289.48	8,229.87	59.61	d.....
Concord & Portsmouth.....	8,347.20	6,632.92	1,714.28	c.....
Connecticut River.....	2,975.54	812.25	2,163.29	76.64
Dover & Winnepesaukee.....	5,145.96	4,572.89	573.07	d.....
Eastern.....	4,798.66	3,134.89	1,663.77	d.....
Fitchburg.....	22,506.36	5,963.64	16,542.72	656.99
Manchester & Lawrence.....	20,819.22	13,516.48	7,302.74	d.....
Manchester & North Weare.....	1,112.96	278.24	834.72	c.....
Manchester & Keene.....	1,398.60	e 349.65	1,048.95	d.....
Manchester Street.....	417.36	417.36	.....	48.21
Mount Washington.....	2,086.80	427.20	1,659.60	31.75
Nashua, Acton & Boston.....	278.24	147.20	131.04	c.....
Nashua & Lowell.....	5,184.44	2,395.31	2,789.13	d.....
Northern.....	31,134.76	14,105.37	17,029.39	d.....
Peterborough.....	683.76	473.19	210.57	d.....
Peterborough & Hillsborough.....	973.84	973.84	.....	d.....
Portland & Ogdensburgh.....	4,166.20	1,062.55	3,103.65	175.19
Portland & Rochester.....	417.36	104.34	313.02	16.42
Portsmouth & Dover.....	1,391.20	1,269.24	121.96	d.....
Profile & Franconia Notch.....	1,391.20	1,367.00	24.20	19.71
Sullivan County.....	9,738.40	2,434.60	7,303.80	268.30
Suncook Valley.....	1,894.40	1,542.47	351.93	c.....
West Amesbury Branch.....	278.24	123.56	154.68	4.37
Wilton.....	3,446.18	2,952.44	493.74	d.....
Wolfeborough.....	629.00	183.29	445.71	d.....
Worcester, Nashua & Rochester...	16,476.84	7,255.61	9,221.23	d.....
Whitefield & Jefferson.....	1,739.00	e 434.75	1,304.25	c.....
Total.....	\$283,042.72	\$160,459.49	\$122,583.23	\$7,424.03

a Includes entire system.

b Includes entire system.

c Included with Concord & Montreal.

d Included with Boston & Maine.

e See remarks on page 173.

TABULAR STATEMENT

Showing the valuation of the several telegraph companies within the limits of the State, and the tax assessed upon them by the state board of equalization, for the year 1891.

CORPORATIONS.	Valuation.	Tax assessed.	Tax paid.
American.....	\$2,000.00	\$27.82	\$27.82
Chester & Derry.....	400.00	5.36	5.36
Commercial Union.....	6,500.00	90.43	90.43
Direct U. S. Cable.....	10,000.00	139.12	139.12
Great Northwestern.....	5,000.00	69.56	69.56
Maine.....	10,000.00	139.12	139.12
Western Union.....	160,000.00	2,225.92	2,225.92
Total.....	\$193,900.00	\$2,697.33	\$2,697.33

TABULAR STATEMENT

Showing the valuation of the several telephone companies within the limits of the State, and the tax assessed upon them by the state board of equalization for the year 1891.

CORPORATIONS.	Valuation.	Tax assessed.	Tax paid.
Brattleborough & Chesterfield.....	\$500.00	\$6.95	\$6.95
Brattleborough & Hinsdale.....	1,000.00	13.91	13.91
Colebrook, Stewartstown & Connecticut Lake.....	600.00	8.35	8.35
New England Telephone & Telegraph Co..	140,000.00	1,947.68	1,947.68
Plymouth & Campton.....	3,000.00	41.74	41.74
Winnepesaukee Bell.....	6,500.00	90.43	90.43
Total.....	\$151,600.00	\$2,109.06	\$2,109.06

TABULAR STATEMENT

Showing the amount of deposits in each Savings Bank and Trust Company in the State, April 1, 1891, the amount invested in real estate, the balance subject to tax, tax paid, amount distributed to towns, and balance accruing to the literary fund.

BANKS.	Deposits and accumulations.	Amount of real estate in New Hampshire.	Amount of real estate in other States.	Balance subject to tax.	Tax paid.	To towns.	Amount to literary fund.
Alton Five-Cents	\$65,762.26	\$1,042.00	.....	\$64,720.26	\$647.20	\$640.05	\$7.15
Amoskeag	4,328,897.98	.....	.....	4,328,897.98	43,288.98	40,950.01	2,338.97
Ashtad	38,612.29	700.00	.....	37,912.29	10,373.12	378.80	524.39
Belknap	1,070,006.26	18,180.00	.....	1,051,826.26	278.53	9,993.87	262.65
Berlin Savings Bank & Trust Co.	27,853.10	.....	.....	27,853.10	5,565.37	5,553.42	15.88
Bristol (a)	571,524.83	3,622.38	\$11,365.24	556,537.21	26,372.67	21,826.01	4,546.66
Cheshire Provident Institution	2,744,941.53	93,950.00	13,724.70	2,637,266.83	3,180.36	2,630.12	550.24
City, Nashua	330,470.92	.....	12,434.73	318,036.19	3,031.33	2,671.56	350.77
Cochecho	310,832.65	7,700.00	.....	303,132.65	919.38	814.03	105.35
Colebrook Guaranty	91,937.52	.....	.....	91,937.52	7,305.12	5,795.42	1,500.70
Connecticut River	730,512.20	.....	.....	730,512.20	750.60	737.18	13.42
Contoocook Valley	77,859.71	.....	2,800.00	75,059.71	1,134.51	1,093.32	41.19
Conway	113,761.09	310.25	.....	113,450.84	1,012.636.26	6,358.07	3,768.29
Dartmouth	1,020,636.26	8,000.00	.....	1,012,636.26	2,355.03	2,137.56	217.47
Dover Five-Cents	246,017.09	10,514.11	.....	235,502.98	621.89	623.89	.....
Epping (d)	63,039.25	850.00	.....	62,189.25	1,004.47	1,004.47	.....
Farmers	100,447.31	.....	.....	100,447.31	6,056.91	5,788.74	268.17
Farmington	608,419.06	7,039.45	55,680.05	605,690.56	1,645.29	1,471.42	173.87
Fitzwilliam	170,662.44	.....	6,133.00	164,529.44	1,207.29	1,179.13	28.16
Frankestown	124,141.62	3,413.00	.....	120,728.62	83,920.33	8,920.33	.....
Franklin	892,032.51	.....	.....	892,032.51	43,117.57	425.78	6.59
Gorham Five-Cents (b)	49,912.34	6,794.77	.....	43,117.57	9,229.70	8,864.70	363.00
Guaranty, Manchester (d)	936,327.09	.....	13,356.72	922,970.37	990.80	990.80	.....
Hillsborough Bridge Guaranty	99,080.44	.....	.....	99,080.44	3,127.78	2,644.63	483.15
Hinsdale	312,777.62	.....	.....	312,777.62	334,911.99	3,287.79	75.87
Iona (c)	346,112.52	11,200.53	.....	334,911.99	30,535.16	26,795.74	3,739.42
Keene Five-Cents	3,057,850.00	2,667.00	1,667.00	3,053,516.00	15,328.11	13,821.32	1,994.25
Keene Guaranty (c)	1,543,211.26	.....	10,400.00	1,532,811.26	11,698.37	10,979.67	718.70
Laconia	1,176,837.37	2,700.00	4,300.00	1,169,837.37	.....	.....	.....

Lake Village.....	302,343.86	2,000.86	300,343.00	3,003.43	2,955.01	48.42
Lancaster (b).....	503,019.06		503,019.06	5,030.19	4,153.77	875.23
Lebanon.....	1,063,290.80	9,326.91	1,053,963.89	10,326.91	8,431.52	2,108.12
Lisbon Savings Bank and Trust Co.....	78,156.53		78,156.53	781.57	750.33	31.24
Littleton.....	983,300.35	2,315.39	980,984.96	9,800.85	8,905.77	904.08
Loan and Trust.....	2,328,910.56	6,100.00	2,322,810.56	23,228.11	22,674.04	554.07
Manchester.....	6,978,516.52		5,975,032.62	59,750.33	56,044.48	3,705.85
Mason Village.....	69,982.69		69,982.66	699.83	957.48	42.35
Mechanics, Manchester.....	337,281.72		337,281.72	3,372.82	3,204.81	168.01
Mechanics, Nashua.....	599,384.21		599,384.21	5,993.84	5,040.43	953.41
Meredith Village.....	518,848.85		518,848.85	5,188.49	4,977.42	211.07
Merrimack County (a).....	1,208,151.92	16,000.00	1,186,351.92	11,863.52	11,437.23	422.89
Merrimack River.....	2,939,645.61	4,100.00	2,906,376.97	29,063.77	27,255.03	1,808.74
Milford.....	1,338,440.51		1,307,665.51	13,076.66	12,372.12	704.54
Monadnock.....	600,187.56	260.00	596,429.13	5,964.29	5,262.34	701.95
Nashua (e).....	3,416,603.60	8,974.03	3,389,234.07	33,892.34	31,538.72	2,413.36
New Hampshire (e) (f).....	3,741,797.31	50,000.00	3,691,797.31	36,917.97	34,945.68	1,880.37
New Hampshire Banking Co.....	1,274,796.72		1,261,802.04	12,618.02	11,523.62	1,094.40
New Ipswich.....	58,306.00	11,087.00	47,219.00	472.19	469.69	2.50
Newmarket.....	189,638.40		149,438.40	1,494.38	1,411.34	83.04
Newport.....	642,788.01	18,200.00	638,024.01	6,380.24	6,272.53	116.71
Norway Plains.....	945,541.67	9,635.74	935,905.93	9,359.06	8,915.53	443.53
Ossipee Valley Ten-Cent.....	132,876.03		132,876.03	1,328.76	1,114.00	214.76
Peoples.....	914,671.79		914,671.79	9,146.72	8,740.69	406.03
Peterborough.....	880,123.47	16,300.00	854,723.47	8,547.23	8,187.07	360.16
Piscataqua.....	632,576.52	1,200.67	619,288.38	6,192.88	4,316.82	1,876.06
Pittsfield.....	347,322.70	6,135.42	341,187.28	3,411.87	3,386.71	25.16
Plymouth Guaranty.....	131,890.83		131,890.83	1,318.91	1,306.54	12.37
Portsmouth (f).....	3,896,816.00	17,717.47	3,866,177.70	38,661.78	37,008.13	10,976.03
Portsmouth Trust and Guaranty Co.....	825,576.53		798,988.68	7,989.89	7,000.76	989.13
Public Guaranty.....	337,883.39	7,752.55	330,130.84	3,301.31	2,754.72	546.59
Rochester.....	267,561.65	3,358.17	263,303.48	2,633.04	2,501.12	131.92
Rochester Loan and Banking Co.....	570,920.70		566,846.51	5,668.47	5,323.14	345.33
Rollinsford.....	704,647.07		647,578.55	6,477.78	3,294.63	3,183.15
Randwich.....	61,420.10	475.00	60,945.10	609.45	589.87	19.58
Strafford.....	4,180,915.18		4,172,302.08	41,723.02	38,470.09	3,252.93
Security.....	251,623.67	8,613.10	246,573.67	2,465.74	2,013.33	452.41
Siwogoganoth.....	400,237.70	1,800.00	400,237.70	4,002.38	3,551.10	451.28
Somersworth.....	1,095,850.54	60,000.00	1,014,072.35	10,140.72	6,430.17	3,710.55
Squamscoth.....	75,669.84		75,669.84	756.70	735.42	21.28
Carried forward.....	\$65,877,017.66	\$425,701.54	\$65,018,539.22	\$650,185.41	\$581,624.85	\$68,560.56

(a), (b), (c), (d), (e), and (f) refer to memoranda on page 253.

TABULAR STATEMENT. — *Continued.*

BANKS.	Deposits and accumulations.	Amount of real estate in New Hampshire.	Amount of real estate in other States.	Balance subject to tax.	Tax paid.	To towns.	Amount to literary fund.
<i>Brought forward.</i>							
Sullivan Savings Institution	\$65,877,017.66	\$425,701.54	\$432,776.90	\$65,018,539.22	\$650,185.41	\$581,624.85	\$68,560.56
Union Five-Cents	1,503,735.95	15,470.00	1,644.50	1,486,621.45	14,866.21	12,800.12	2,057.00
Union Guaranty	470,036.02	.....	12,804.26	457,231.76	4,572.32	4,478.61	93.71
Walpole	642,476.48	.....	1,100.00	641,376.48	6,413.76	6,136.86	276.90
Wilton	173,405.66	.....	.....	173,405.66	1,734.06	1,353.73	380.33
Wolfeborough	160,550.00	6,000.00	13,458.00	141,092.00	1,410.92	1,383.44	27.48
Wolfeborough Loan & Banking Co.	154,557.56	220.00	.....	154,337.56	1,543.38	1,531.55	11.83
Woodsville Guaranty	111,582.15	.....	.....	111,582.15	1,115.82	1,068.19	47.63
	70,498.97	.....	.....	70,498.97	704.99	557.02	147.97
Total of Savings Banks	\$69,163,860.45	\$447,391.54	\$461,783.66	\$68,254,685.25	\$682,546.87	\$610,943.37	\$71,603.50
TRUST COMPANIES.							
American	\$100,000.00	.....	.....	\$100,000.00	\$1,000.00	\$340.00	\$600.00
E. H. Rollins & Sons	275,438.57	.....	.....	275,438.57	2,754.39	2,405.11	349.28
Granite State	233,430.51	.....	.....	233,430.51	2,334.30	2,192.40	141.90
Nashua	239,673.60	.....	.....	239,673.60	2,396.74	2,199.01	197.73
New Hampshire	669,232.10	.....	.....	513,299.74	5,133.00	4,319.37	813.63
Security	263,385.96	.....	\$155,932.36	263,385.96	2,633.86	1,963.61	670.25
Total of Trust Companies.	\$1,781,160.74	.....	\$155,932.36	\$1,625,228.38	\$16,252.29	\$13,419.50	\$2,832.79
Grand total	\$70,945,021.19	\$447,391.54	\$617,716.02	\$69,879,913.63	\$698,799.16	\$624,362.87	\$74,436.29

MEMORANDA.

Explaining the distribution of Savings-Bank Taxes where the banks hold real estate in excess of deposits in any town.

- (a) The Bristol Savings Bank holds real estate in
Wilmot.....\$339.72. 1 per cent, \$3.40. Taken from Merrimack
County Bank.
- (b) The Gorham Five Cent Savings Bank holds real estate in
Milan.....\$119.00. 1 per cent, \$1.19. Taken from Lancaster
Bank.
- (c) The Iona Savings Bank holds real estate in
Ellsworth\$1,254.50. 1 per cent, \$12.54. Taken from Keene
Guaranty Bank.
- (d) The Epping Savings Bank holds real estate in
Deerfield.....\$200.00. 1 per cent, \$2.00. Taken from Guaranty
Bank, Manchester.
- (e) The Nashua Savings Bank holds real estate in
Epping.....\$5,974.03. 1 per cent, \$59.74. Taken from New Hamp-
shire Savings Bank.
- (f) The Portsmouth Savings Bank holds real estate in
Gilmanton\$2,318.67. 1 per cent, \$23.18. Taken from New Hamp-
shire Savings Bank.

STATEMENT

*Showing gains and losses in the distribution of Savings-Bank Taxes,
as per above memoranda.*

GAINS.	Amt.	LOSSES.	Amt.
Lancaster Savings Bank.....	\$1.19	Bristol Savings Bank.....	\$3.40
Guaranty Savings Bank, Man- chester.....	2.00	Gorham Savings Bank.....	1.19
Keene Guaranty Savings Bank	12.54	Iona Savings Bank.....	12.54
Merrimack County Savings Bank.....	3.40	Epping Savings Bank.....	2.00
New Hampshire Savings Bank.	82.92	Portsmouth Savings Bank...	23.18
		Nashua Savings Bank.....	59.74
Totals.....	\$102.05	Totals.....	\$102.05

(a), (b), (c), (d), (e), and (f) refer to statement on pages 250 and 251.

TABULAR STATEMENT

Showing the amount of state tax collected; the amount credited to the several cities and towns for insurance tax, railroad tax, savings-bank tax, and literary fund for the year 1891; total credits and balances.

TOWNS.	State tax.	Insurance tax.	Railroad tax.	Savings-bank tax.	Literary fund.	Total credits.	Balance paid to town.	Balance paid to State.
Acworth.....	\$1,030.00			\$1,026.05	\$187.50	\$1,813.55	\$783.55	\$82.70
Albany.....	180.00			28.55	68.75	37.30		
Alexandria.....	610.00		\$20.56	596.10	212.50	829.16	219.16	56.51
Allentown.....	1,660.00	\$15.00	226.82	1,267.92	93.75	1,693.49		
Alstead.....	1,505.00			2,148.88	216.25	2,365.13	860.13	
Alton.....	1,500.00		460.89	2,234.84	291.25	2,986.98	1,486.98	
Anchster.....	2,135.00	22.50	508.62	3,190.66	232.50	3,954.28	1,819.28	
Andover.....	1,390.00	3.75	801.44	1,936.74	220.00	2,961.93	1,571.93	
Antrim.....	1,595.00	28.50		2,707.34	293.75	3,029.59	1,434.59	
Ashland.....	1,150.00	3.00	69.17	1,224.63	301.25	1,598.05	448.05	
Aukinson.....	690.00		92.60	928.41	62.50	383.51		396.49
Auburn.....	745.00		23.90	1,130.55	167.50	1,322.04	577.04	
Barnstead.....	1,335.00		1.19	2,042.58	239.50	2,276.27	941.27	
Barrington.....	1,540.00	4.50	213.34	2,386.03	302.50	2,996.37	1,366.37	
Bartlett.....	625.00		383.29	63.14	343.75	790.18	165.18	
Bath.....	1,220.00		150.80	392.42	217.50	760.81		469.19
Bedford.....	1,730.00		67.83	2,696.36	256.25	2,920.44	1,190.44	
Belmont.....	1,435.00		86.26	2,130.13	210.00	2,426.39	961.39	
Bellingham.....	620.00	3.75	74.29	1,025.57	116.25	1,219.86	590.86	
Benton.....	225.00		28.66	40.99	86.25	155.90		69.10
Berlin.....	1,340.00	.75	44.91	242.93	398.75	687.34		682.66
Bethlehem.....	1,570.00		327.14	940.50	376.25	1,643.89	73.89	
Boscawen.....	1,860.00	3.75	714.43	1,846.27	317.50	2,881.95	1,021.95	

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Row	1,180.00	.75	92	2,521.35	163.75	2,931.77	1,751.77	
Bradford	1,270.00		350.72	1,837.64	170.00	2,358.36	1,088.36	
Brentwood	770.00	3.75	24.49	674.34	141.25	843.83	73.83	
Bridgewater	315.00		16.51	381.35	87.50	485.36	170.36	
Bristol	1,905.00	3.00	356.95	3,407.91	331.25	4,099.11	2,194.11	
Brookfield	360.00		10.34	331.07	95.00	486.41	136.41	
Brookline	720.00		1.92	908.41	122.50	1,092.83	372.83	
Campton	860.00		68.67	1,017.90	252.50	1,339.07	479.07	
Canaan	1,410.00		642.50	1,557.57	383.75	2,583.82	1,173.82	
Candia	1,220.00		99.04	2,732.14	261.25	3,092.43	1,872.43	
Canterbury	1,465.00		236.16	1,804.67	210.00	2,250.83	785.83	
Carroll	640.00		147.22	320.79	210.00	678.01	38.01	
Centre Harbor	650.00		5.08	1,107.24	98.75	1,211.07	561.07	
Charlestown	2,340.00		1,438.45	3,773.36	348.75	5,560.56	3,220.56	88.63
Chatham	220.00			12	131.25	131.27	688.71	
Chester	1,180.00		58.00	1,594.37	216.25	1,868.71	576.70	
Chesterfield	1,635.00		28	2,010.17	201.25	2,211.70	1,069.85	
Chichester	905.00		391.18	1,444.92	138.75	1,974.85	4,533.41	
Clarendon	6,635.00	26.25	867.46	9,038.45	1,226.25	11,158.41	110.45	
Clarksville	240.00			18.30	111.25	129.55	105.45	
Colebrook	1,565.00	3.00	7.62	928.93	520.00	1,450.55	271.42	
Columbia	575.00			141.08	162.50	303.58		
Concord	31,485.00	588.00	31,220.06	39,477.25	3,435.00	74,720.31	43,235.31	
Conway	1,775.00	7.50	1,258.24	1,130.34	643.75	3,048.83	1,273.83	
Cornish	1,245.00		269.46	607.00	193.75	1,130.21	114.79	
Croydon	510.00			494.27	120.00	614.27	104.27	
Dalton	375.00		59.97	184.70	152.50	397.17	22.17	
Danbury	745.00		280.42	1,096.07	163.75	1,540.24	795.24	
Danville	505.00		6.71	450.88	118.75	576.34	71.34	
Deerfield	1,500.00	23.25	632.11	2,164.33	288.75	3,108.44	1,608.44	
Deering	565.00		11.16	777.48	110.00	808.64	333.64	
Derry	2,370.00		500.18	3,748.91	522.50	4,771.50	2,401.50	
Dorchester	260.00			177.72	115.00	292.72	32.72	
Dover	22,690.00	146.25	5,022.44	26,090.89	1,995.00	33,254.58	10,564.58	
Dublin	1,020.00			1,651.27	135.00	1,786.27	766.27	
Dummer	225.00		16.56	28.50	111.25	156.31	65.69	
Dunbarton	1,245.00		379.03	1,984.02	125.00	2,488.05	1,243.05	
Carried forward	\$122,255.00	\$887.25	\$48,921.26	\$149,832.30	\$19,018.75	\$218,659.56	\$98,790.64	\$2,386.08

TABULAR STATEMENT. — *Continued.*

Towns.	State tax.	Insurance tax.	Railroad tax.	Savings-bank tax.	Literary fund.	Total credits.	Balance paid to town.	Balance paid to State.
<i>Brought forward.</i>								
Durham.....	\$122,255.00	\$887.25	\$48,021.26	\$149,832.30	\$19,018.75	\$218,650.56	\$98,790.64	\$2,386.08
East Kingston.....	1,730.00		303.14	1,007.57	198.75	2,109.46	379.46	
Easton.....	535.00	7.50	177.96	61.40	107.50	334.36		180.64
Eaton.....	260.00			304.37	68.75	373.12	113.12	
Effingham.....	310.00			110.30	145.00	255.30		54.70
Ellsworth.....	525.00			202.93	202.50	405.43		116.57
Enfield.....	85.00			32.35	48.75	81.10		3.90
Epping.....	2,205.00		658.76	2,526.19	366.25	3,551.20		
Essex.....	1,725.00	9.00	610.90	1,417.61	356.25	2,393.76		
Essex.....	1,090.00	19.50	207.24	1,342.55	172.50	1,741.79	688.76	
Essex.....	150.00			34.08	56.25	90.33		59.67
Exeter.....	6,010.00	45.00	2,841.94	3,886.31	692.50	7,465.75	885.75	
Farmington.....	4,200.00		320.33	4,889.87	651.25	5,862.05	1,662.05	
Fitzwilliam.....	1,405.00		161.00	2,454.49	286.25	2,902.34	1,497.34	
Francestown.....	1,325.00	63.75	70.39	1,694.19	185.00	2,013.33	688.33	
Franklin.....	805.00		115.33	464.02	142.50	722.45		82.55
Franklin.....	6,005.00	65.25	9,298.00	7,408.55	903.75	17,735.64	11,730.64	
Freedom.....	7,200.00	3.75		730.51	162.50	896.76	176.76	
Fremont.....	600.00		169.51	494.50	153.75	617.76	217.76	
Gilford.....	3,590.00	14.25	452.61	5,812.93	621.25	6,901.04	3,311.04	
Gilman.....	1,400.00		17.36	2,943.82	262.50	2,523.88	1,193.88	
Gilsum.....	940.00	7.50		1,606.48	131.25	1,745.23	805.23	
Goffstown.....	3,365.00	54.75	296.08	5,711.98	500.00	6,582.81	3,197.81	
Gorham.....	1,050.00	3.00	612.74	651.08	418.75	1,685.57	635.57	
Gorham.....	430.00			512.84	90.00	602.84	172.84	
Granham.....	970.00		239.32	1,365.75	247.50	1,852.57	902.57	
Greenfield.....	385.00		35.48	384.80	110.00	550.28	165.28	
Greenland.....	815.00	3.75	149.84	1,393.35	158.75	1,705.69	890.69	
Greenville.....	1,115.00	11.25	386.31	1,125.57	132.50	1,695.63	540.63	
Groton.....	1,450.00	23.25	226.24	1,295.00	218.75	1,763.24	313.24	
Groton.....	335.00		5.08	308.85	128.75	442.68	87.68	
Hampstead.....	1,100.00		548.60	910.85	195.00	1,663.54	563.54	

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Hampton.....	1,520.00	37.50	269.43	521.13	201.25	1,029.31	490.69
Hampton Falls.....	735.00	36.00	105.17	297.30	145.00	583.47	151.53
Hancock.....	480.00	2.25	100.84	1,915.52	411.25	2,173.61	1,193.61	.....
Haverhill.....	2,465.00	26.25	515.84	3,700.78	411.25	4,654.12	1,689.42	.....
Harrisville.....	820.00	.....	.....	1,380.91	152.50	1,543.41	633.41	.....
Hart's Location.....	55.00	.....	66.65	30.15	.....	116.80	61.80	.....
Haverhill.....	2,515.00	4.50	724.82	1,411.62	736.25	2,877.19	362.19	.....
Hebron.....	275.00	.....	1.27	349.25	50.00	400.52	125.52	.....
Hemlock.....	1,925.00	.....	224.63	3,298.31	258.75	3,781.69	1,856.69	.....
Hill.....	525.00	.....	219.12	734.78	125.00	1,078.90	553.90	.....
Hillsborough.....	2,410.00	63.00	131.14	3,652.25	436.25	4,882.64	1,872.64	.....
Hinsdale.....	2,500.00	11.25	37.83	3,464.74	555.00	4,068.82	1,568.82	.....
Holderness.....	575.00	.....	6.35	455.34	137.50	599.19	24.10	.....
Hollis.....	1,905.00	45.00	179.93	1,880.47	201.25	2,306.65	401.65	.....
Hooksett.....	1,955.00	106.50	633.41	2,303.04	302.50	3,367.45	1,412.45	.....
Hookinton.....	2,885.00	35.25	404.06	4,537.79	348.75	5,325.85	2,440.85	.....
Hudson.....	1,745.00	11.25	467.99	2,705.77	241.25	3,426.26	1,681.26	.....
Jackson.....	435.00	.....	.....	155.25	148.75	304.00	.....	151.00
Jaffrey.....	2,265.00	9.00	218.91	4,138.08	285.00	4,650.99	2,385.99	.....
Jefferson.....	635.00	.....	.....	235.10	280.00	515.10	.....	119.90
Keene.....	17,970.00	413.25	4,581.33	26,354.05	1,481.25	32,829.88	14,850.88	.....
Kensington.....	640.00	.....	14.45	368.75	111.25	494.45	.....	145.55
Kingson.....	850.00	.....	172.63	264.42	201.25	638.30	.....	211.70
Lancaster.....	6,300.00	124.50	1,089.30	9,028.16	868.75	11,110.71	4,810.71	.....
Lancaster.....	2,825.00	66.75	169.07	4,970.99	721.25	5,928.06	3,103.06	.....
Lancaster.....	570.00	.....	22.11	705.77	126.25	874.13	284.13	.....
Lebanon.....	755.00	.....	.....	923.54	67.50	997.04	262.04	.....
Lee.....	5,485.00	4.50	2,401.93	6,810.50	697.50	9,914.43	4,429.43	.....
Lebanon.....	1,045.00	.....	436.27	1,335.71	121.25	1,893.33	848.33	.....
Lebanon.....	590.00	.....	.....	695.74	854.40	234.40	.....	.....
Lebanon.....	85.00	.....	.....	129.97	28.75	158.72	73.72	.....
Litchfield.....	2,250.00	.....	152.78	1,644.83	491.25	2,288.86	38.86	.....
Litchfield.....	770.00	5.25	84.19	1,196.16	51.25	1,336.85	506.85	.....
Littleton.....	3,785.00	.....	358.92	3,995.70	822.50	5,177.42	1,392.42	.....
Livermore.....	110.00	.....	.....	20.67	.....	20.67	.....	80.33
Livermore.....	1,865.00	22.50	523.16	2,846.17	241.25	3,633.08	1,768.08	.....
Loudon.....	1,715.00	3.75	150.33	2,786.25	255.00	3,195.33	1,480.33	.....
Lynn.....	460.00	.....	.....	190.12	133.75	323.87	.....	136.13
Lynn.....	1,365.00	.....	24.84	1,529.26	350.00	1,904.10	539.10	.....
Lynnborough.....	730.00	1.50	39.12	623.63	160.00	844.25	114.25	.....
Madbury.....	830.00	.....	121.02	1,406.82	70.00	1,597.84	767.84	.....
Madison.....	390.00	.....	44.58	426.97	132.50	604.05	214.05	.....
Carried forward.....	\$250,345.00	\$2,248.50	\$81,603.02	\$308,287.15	\$39,636.25	\$431,764.92	\$185,599.86	\$4379.94

TABULAR STATEMENT. — *Continued.*

TOWNS.	State tax.	Insurance tax.	Railroad tax.	Savings-bank tax.	Literary fund.	Total credits.	Balance paid to town.	Balance paid to State.
<i>Brought forward.</i>								
Manchester.....	\$250,545.00	\$2,248.50	\$81,603.02	\$308,297.15	\$39,626.25	\$431,761.92	\$185,599.86	\$4,379.94
Marlborough.....	63,435.00	3,920.25	22,059.03	73,275.55	5,287.50	104,549.33	41,107.33	.....
Marlow.....	1,730.00	.....	65.95	3,530.14	435.00	4,031.09	2,301.09	.....
Mason.....	1,175.00	3.75	.....	3,033.20	145.00	3,181.95	2,006.95	.....
Meredith.....	780.00	.....	124.06	557.61	131.25	812.92	32.92	.....
Merrimack.....	2,120.00	26.25	173.84	3,544.64	402.50	4,147.23	2,027.23	.....
Middleton.....	1,850.00	.....	962.75	2,936.76	233.75	4,133.26	2,283.26	.....
Milan.....	305.00	.....	.....	624.06	58.75	682.81	377.81	.....
Milford.....	520.00	.....	68.95	266.53	290.00	625.48	95.48	.....
Milford.....	5,110.00	149.25	735.75	9,539.12	652.50	11,076.62	5,966.62	.....
Milton.....	1,455.00	7.50	74.87	2,921.66	387.50	3,391.53	1,936.53	.....
Mont Vernon.....	815.00	.....	14.92	858.75	67.50	941.17	126.17	.....
Monroe.....	645.00	.....	.....	35.89	147.50	183.39	.....	461.61
Moultonborough.....	880.00	.....	.....	846.73	306.25	1,152.98	272.98	.....
Nashua.....	28,500.00	848.25	9,063.07	39,821.43	3,667.50	53,400.25	24,900.25	.....
Nelson.....	430.00	.....	2.28	811.49	72.50	886.27	456.27	.....
New Boston.....	1,840.00	36.00	27.60	3,363.84	275.00	3,702.83	1,862.83	.....
Newbury.....	730.00	.....	87.52	1,353.30	108.75	1,549.57	819.57	.....
Newcastle.....	450.00	.....	65.00	907.37	85.00	1,051.37	607.37	.....
New Durham.....	605.00	.....	46.48	752.10	142.50	941.08	336.08	.....
New Hampton.....	925.00	.....	24.48	1,429.67	210.00	1,664.15	739.15	.....
Newington.....	580.00	.....	43.11	720.98	58.75	822.84	242.84	.....
New Ipswich.....	1,405.00	.....	.....	1,124.31	198.75	1,323.06	.....	81.94
New London.....	1,085.00	3.75	115.65	1,342.65	175.00	1,636.45	551.45	.....
Newmarket.....	2,710.00	7.50	430.31	2,024.06	503.75	2,956.62	255.62	.....
Newport.....	3,935.00	69.75	2,116.56	6,063.10	580.00	8,829.41	4,894.41	.....
Newton.....	795.00	.....	221.54	71.76	242.50	535.80	.....	259.20
Northfield.....	1,265.00	.....	240.88	1,333.62	88.75	1,663.25	398.25	.....
North Hampton.....	1,470.00	.....	78.02	1,340.77	166.25	1,585.04	115.04	.....
Northumberland.....	950.00	.....	502.36	710.97	372.50	1,585.83	635.83	.....
Northwood.....	1,405.00	21.00	6.04	2,481.92	281.25	2,789.81	1,384.81
Nottingham.....	965.00	1,169.08	278.75	1,447.83	482.83

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Orange.....	175.00	27.64	110.18	53.75	191.57	16.57	434.58
Orford.....	1,075.00	5.08	431.50	203.75	640.42
Ossipee.....	1,300.00	331.31	1,621.69	345.00	2,298.75	998.75	.....
Pelham.....	1,295.00	125.77	729.56	180.00	1,035.33	.....	259.67
Pembroke.....	3,195.00	352.07	3,883.82	337.50	4,760.14	1,565.14	.....
Peterborough.....	4,100.00	242.25	6,834.60	570.00	8,230.43	4,130.43	.....
Piermont.....	845.00	.....	230.66	116.00	440.66	404.34	.....
Pittsburg.....	780.00	.....	68.47	156.25	224.72	555.28	.....
Pittsfield.....	2,805.00	39.00	4,193.09	535.00	5,197.15	2,392.15	.....
Plainfield.....	1,415.00	27.14	1,569.75	291.25	1,888.14	473.14	.....
Plaistow.....	635.00	.....	222.77	183.75	563.02	.....	71.98
Plymouth.....	2,175.00	47.25	2,853.05	461.25	4,429.19	2,254.19	.....
Portsmouth.....	20,115.00	1,114.50	27,379.39	1,540.00	51,364.08	31,249.08	.....
Randolph.....	160.00	.....	1.89	21.25	23.14	.....	136.86
Raymond.....	930.00	46.43	1,686.71	237.50	1,970.64	1,040.64	.....
Richmond.....	685.00	.....	785.61	126.25	911.86	246.86	.....
Rindge.....	1,460.00	66.80	2,497.82	180.00	2,744.62	1,284.62	.....
Rochester.....	8,495.00	144.75	12,329.85	1,486.25	15,874.39	7,379.39	.....
Rollinsford.....	3,250.00	7.50	3,780.71	336.25	4,887.22	1,637.22	.....
Roxbury.....	175.00	.....	427.18	27.50	454.68	279.68	.....
Rumney.....	920.00	3.75	1,139.36	283.75	1,668.07	748.07	.....
Rye.....	1,945.00	11.25	3,895.75	140.00	4,250.50	2,305.50	.....
Salem.....	1,340.00	.....	610.97	339.00	1,643.51	393.51	.....
Salisbury.....	900.00	22.80	1,265.70	147.50	1,436.00	536.00	.....
Sandborn.....	1,300.00	138.43	2,534.41	260.00	2,932.84	1,542.84	.....
Sandown.....	445.00	95.43	383.85	101.25	582.23	137.23	.....
Sandwich.....	1,220.00	16.51	965.80	293.00	1,277.31	57.31	4.57
Seabrook.....	640.00	138.38	126.96	381.25	635.43	.....	21.79
Sharon.....	180.00	.....	115.80	31.25	158.21	.....	.....
Shelburne.....	280.00	202.43	64.86	87.50	354.79	74.79	.....
Somersworth.....	7,385.00	36.00	7,872.80	1,121.25	9,660.00	2,275.00	.....
South Hampton.....	500.00	1.73	79.79	48.75	130.27	.....	369.73
South Newmarket.....	1,105.00	28.50	1,081.70	191.25	2,404.37	1,299.37	.....
Springfield.....	430.00	.....	396.58	136.25	532.83	102.83	.....
Stark.....	555.00	190.40	272.91	196.25	659.56	104.56	369.34
Stewartstown.....	770.00	.....	123.46	277.50	400.66	.....	.....
Stoddard.....	520.00	.....	1,012.22	100.00	1,112.22	592.22	.....
Strafford.....	1,345.00	.....	1,773.29	341.25	2,114.54	769.54	.....
Strafford.....	905.00	440.88	1,974.41	358.25	1,771.64	866.64	.....
Sullivan.....	1,455.00	203.76	1,276.76	138.75	1,619.27	104.27	.....
Sullivan.....	535.00	.....	1,100.54	103.75	1,293.99	648.99	.....
Sunapee.....	740.00	145.64	1,219.70	217.50	1,582.84	842.84	.....
Carried forward.....	\$461,990.00	\$9,204.00	\$577,039.39	\$68,447.50	\$805,316.06	\$351,136.89	\$7,810.83

TABULAR STATEMENT. — Continued.

TOWNS.	State tax.	Insurance tax.	Railroad tax.	Savings-bank tax.	Literary fund.	Total credits.	Balance paid to town.	Balance paid to State.
<i>Brought forward.</i>								
Surry.....	\$461,990.00	\$9,204.00	\$150,564.57	\$577,009.99	\$68,447.50	\$895,316.06	\$351,136.89	\$7,810.83
Sutton.....	475.00	.....	6.93	823.76	71.25	901.94	426.94	.....
Swansey.....	1,005.00	.....	70.63	1,311.77	190.00	1,572.40	567.40	.....
Tamworth.....	2,145.00	2.25	110.92	4,277.87	398.75	4,780.79	2,644.79	.....
Temple.....	870.00	.....	.....	817.42	235.00	1,052.42	182.42	.....
Tenney.....	520.00	.....	6.73	670.81	75.00	732.57	232.57	.....
Thornton.....	410.00	.....	.....	153.94	175.00	328.94	.....	81.06
Tilton.....	2,145.00	23.25	1,995.91	3,870.75	391.25	6,281.16	4,136.16	.....
Troy.....	1,055.00	.....	145.36	1,588.85	225.00	1,933.21	901.21	.....
Tuftsborough.....	625.00	1.50	.....	372.52	175.00	549.02	.....	75.98
Unity.....	745.00	.....	.....	686.36	203.75	890.11	145.11	.....
Wakefield.....	1,600.00	20.25	1,140.46	1,802.54	305.00	3,208.25	1,668.25	.....
Walpole.....	3,540.00	.....	736.72	3,901.99	491.25	5,129.96	1,589.96	.....
Warner.....	2,160.00	21.75	1,133.31	2,520.47	291.25	3,966.78	1,896.78	.....
Warren.....	830.00	.....	243.07	1,442.23	178.75	1,861.05	1,034.05	.....
Washington.....	845.00	.....	.....	791.90	116.25	908.15	63.15	.....
Waterville.....	65.00	.....	.....	.....	10.00	10.25	.....	54.75
Weare.....	2,295.00	122.25	150.46	3,342.00	335.00	3,949.80	1,654.80	.....
Webster.....	940.00	.....	162.77	1,635.62	107.50	1,905.89	965.89	.....
Wentworth.....	595.00	.....	372.21	600.98	161.50	1,135.69	540.69	.....
Westmoreland.....	1,690.00	.....	173.35	2,621.92	191.25	2,888.52	1,198.52	.....
Westworth's Location.....	45.00	.....	.....	.....	.....	.....	.....	45.00
Wentworth.....	1,445.00	.....	10.03	1,376.50	533.75	1,920.28	505.28	.....
Winnet.....	770.00	.....	58.45	1,259.05	181.25	1,498.75	728.75	.....
Wilton.....	2,700.00	15.00	1,005.48	4,369.36	358.75	5,748.59	3,048.59	.....
Winchester.....	3,485.00	.....	90.81	3,559.06	661.25	4,311.12	826.12	.....
Windham.....	925.00	.....	479.98	642.93	130.00	1,252.91	327.91	.....
Windsor.....	120.00	.....	146.31	146.31	17.50	163.81	43.81	.....
Wolfborough.....	2,820.00	101.25	295.95	2,674.39	497.50	3,479.09	659.09
Woodstock.....	215.00	808.99	94.82	87.50	991.31	776.31

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	\$500,000.00	\$9,511.50	\$159,675.09	\$624,362.87	\$75,243.75	\$868,793.21	\$377,814.44	\$9,021.23
Totals.....								
Kilkenney.....	75.00							75.00
Thompson & Meserve's Purchase.	60.00							60.00
Success.....	35.00							35.00
Second College Grant.....	30.00							30.00
Sargent's Purchase.....	10.00							10.00
Pinkham's Grant.....	10.00							10.00
Odell's Township.....	105.00							105.00
Millsfield.....	60.00							60.00
Martin's Location.....	10.00							10.00
Low & Burbank's Grant.....	40.00							40.00
Gilmanton & Atkinson Acad- emies' Grant.....	60.00							60.00
Erving's Grant.....	10.00							10.00
Dix's Grant.....	20.00							20.00
Crawford's Purchase.....	60.00							60.00
Dixville.....	40.00							40.00
Cutt's Grant.....	15.00							15.00
Chandler's Purchase.....	5.00							5.00
Cambridge.....	75.00							75.00
Bear's Grant.....	10.00							10.00
Bean's Purchase.....	60.00							60.00
Total.....		\$500,000.00	\$9,511.50	\$159,675.09	\$624,362.87	\$75,243.75	\$868,793.21	\$9,021.23

FINANCIAL STATEMENTS

OF THE CITIES AND TOWNS COMPILED BY COUNTIES,
IN ACCORDANCE WITH THE PROVISIONS OF CHAPTER
16 OF THE PUBLIC STATUTES.

ROCKINGHAM

Towns.	Assessed valuation.	Taxes assessed for all purposes.	Tax on \$100.	Total debt.	Assets.
1. Atkinson	\$302,994.00	\$3,241.84	\$1.07	.....	\$217.57
2. Auburn	273,514.00	3,010.95	1.10	\$450.00	1,674.69
3. Brentwood	310,042.00	3,100.42	1.00	103.00	175.42
4. Candia	352,338.00	5,508.51	1.56	4,531.99	3,310.61
5. Chester	372,301.00	4,021.14	1.08	835.48	1,640.36
6. Danville	200,990.00	2,713.36	1.35	2,953.00	277.81
7. Deerfield	443,296.00	5,884.00	1.32½	4,143.19	3,152.89
8. Derry	1,004,978.00	22,738.13	2.26	19,692.40	6,437.19
9. East Kingston	231,109.00	3,463.30	1.50	4,651.52	3,885.11
10. Epping	699,478.00	10,515.66	1.50	9,707.82	3,924.15
11. Exeter	2,802,837.00	46,246.81	1.65	60,800.00	11,139.28
12. Fremont	260,162.00	2,758.42	1.06	281.75	842.74
13. Greenland	373,842.00	4,486.18	1.20	10,000.00	6,685.54
14. Hampstead	353,130.00	4,237.29	1.20	1,557.25	1,928.29
15. Hampton	656,576.00	8,207.20	1.25	5,640.04	666.91
16. Hampton Falls	293,069.00	3,820.83	1.30	950.00	615.65
17. Kensington	266,836.00	3,393.60	1.27	403.80	480.59
18. Kingston	361,521.00	5,423.78	1.50	6,460.00	2,200.29
19. Londonderry	570,294.00	8,098.17	1.42	5,700.00	2,810.75
20. Newcastle	201,964.00	3,023.54	1.49	27,247.50	1,913.04
21. Newington	218,299.00	2,299.87	1.05	.....	654.95
22. Newmarket	1,234,560.00	19,752.96	1.60	24,360.00	4,035.73
23. Newton	382,072.00	6,344.89	1.66	15,185.75	2,021.63
24. No. Hampton	596,945.00	6,579.84	1.10	2,070.00	1,372.10
25. Northwood	524,259.00	8,740.18	1.67	17,070.57	4,075.99
26. Nottingham	348,844.00	5,581.50	1.60	9,960.01	1,514.27
27. Plaistow	307,474.00	4,612.11	1.50	1,554.74	1,010.09
28. Portsmouth	7,585,778.00	145,646.98	1.92	546,740.15	238,683.54
29. Raymond	371,314.00	4,857.70	1.30	1,052.00	1,968.75
30. Rye	589,652.00	7,308.80	1.24	1,956.79	464.39
31. Salem	624,864.00	10,622.79	1.70	15,997.61	987.16
32. Sandown	166,741.00	2,251.66	1.35	1,540.28	1,958.47
33. Seabrook	262,775.00	5,912.44	2.25	9,557.85	1,888.36
34. So. Hampton	218,563.00	3,169.16	1.45	2,500.00	408.02
35. S. Newmarket	372,704.00	3,675.00	.99	154.48	561.61
36. Stratham	519,853.00	4,788.00	.92	672.87	2,194.91
37. Windham	353,588.00	4,030.92	1.14	206.00	1,094.92
Aggregate	\$25,009,556.00	\$400,067.93	\$1.60	\$816,687.84	\$318,873.77

COUNTY.

Net debt.	Surplus.	(a) Increase or (b) decrease during year.	Cost of public works.	Purpose for which debt was incurred.	
1.	\$217.57	<i>d</i>	\$137.99	\$273.79	Hearse-house, common.
2.	1,224.69	<i>c</i>	419.63		
3.	72.42	<i>d</i>	60.24		
4. \$1,221.38		<i>b</i>	1,511.45		War expenses.
5.	804.88	<i>b</i>	885.35		
6. 2,675.19		<i>b</i>	601.55		
7. 990.30		<i>b</i>	731.88		
8. 13,255.21		<i>a</i>	2,679.94		Highway.
9. 766.41		<i>b</i>	700.95		
10. 5,783.67		<i>b</i>	493.83		Watson Academy and war.
11. 49,660.72		<i>b</i>	2,061.97	52,500.00	{ Street improvements and sewers.
12.	560.99	<i>c</i>	304.53		
13. 3,314.46		<i>a</i>	255.47		War.
14.	371.04	<i>c</i>	182.92		
15. 4,973.13		<i>b</i>	451.83		{ Roads and repairing town-house.
16. 334.35		<i>b</i>	515.63		Town hall.
17.	76.79	<i>d</i>	20.88		
18. 4,259.71		<i>b</i>	333.82		Trust funds.
19. 2,889.25		<i>b</i>	2,038.20		
20. 25,334.46		<i>b</i>	1,218.43		Rebellion.
21.	654.95	<i>c</i>	332.84		
22. 20,324.27		<i>b</i>	3,241.48		{ Highway, bridges, and war debt.
23. 13,164.12		<i>b</i>	302.73		War, town hall.
24. 677.90		<i>b</i>	841.44		
25. 12,994.58		<i>a</i>	682.37		War, new highway.
26. 8,445.74		<i>a</i>	1,097.88	365.00	{ Cemetery and town ex- penses.
27. 544.65		<i>b</i>	487.75		
28. 308,056.61		<i>a</i>	13,312.54		
29.	916.75	<i>c</i>	217.40		
30. 1,492.40		<i>a</i>	648.76		Expenses of cemetery.
31. 15,010.45		<i>a</i>	2,592.22		Building road.
32.	418.19	<i>c</i>	205.19		
33. 7,669.49		<i>b</i>	1,088.85		
34. 2,091.98		<i>b</i>	67.59		War.
35.	407.13	<i>c</i>	111.94		
36.	1,522.04	<i>c</i>	571.24		
37.	888.92	<i>c</i>	302.59		
\$505,950.43	\$8,136.36	<i>ad</i>	\$21,488.29	\$53,138.79	
		<i>bc</i>	20,223.01		
			* \$1,265.28		

c Increase of assets.*d* Decrease of assets.

* Net increase.

STRAFFORD

TOWNS.	Assessed valuation.	Taxes assessed for all purposes.	Tax on \$100.	Total debt.	Assets.
1. Barrington	\$468,714.00	\$12,177.62	\$2.60	\$23,283.88	\$6,544.91
2. Dover	9,105,206.00	163,893.70	1.80	924,000.00	322,354.12
3. Durham	544,504.00	5,990.08	1.10	400.00	2,421.00
4. Farmington	1,325,937.00	31,873.95	2.40	66,781.88	32,619.94
5. Lee	306,000.00	3,763.80	1.23	1,373.64	2,477.56
6. Madbury	262,765.00	2,312.29	.88	18.00	1,008.76
7. Middleton	97,051.00	2,038.07	2.10	300.00	1,165.23
8. Milton	580,220.00	10,741.38	1.85	55,050.00	56,357.11
9. New Durham ..	234,814.00	3,876.74	1.65	1,752.84	2,166.30
10. Rochester	3,595,612.00	71,593.46	2.00	244,392.73	57,211.25
11. Rollinsford	1,185,265.00	12,568.09	1.06	895.24	.....
12. Somersworth ..	2,904,780.00	52,875.24	1.82	40,000.00	.....
13. Strafford	477,626.00	8,940.17	1.87	10,362.41	8,619.47
Aggregate	\$21,088,494.00	\$382,644.59	\$1.81	\$1,368,610.62	\$492,945.65

BELKNAP

TOWNS.	Assessed valuation.	Taxes assessed for all purposes.	Tax on \$100.	Total debt.	Assets.
1. Alton	\$543,366.00	\$10,486.96	\$1.93	\$2,372.25	\$1,982.82
2. Barnstead	507,417.00	8,121.00	1.60	6,145.84	3,759.54
3. Belmot	510,136.00	6,631.77	1.30	.....	1,446.52
4. Centre Harbor ..	225,721.00	2,003.52	.89	.....	1,957.63
5. Gilford	1,382,306.00	29,085.79	2.10	13,726.21	6,176.72
6. Gilmanton	533,344.00	9,218.39	1.73	7,735.71	3,279.76
7. Laconia	2,945,770.00	60,204.72	2.04	102,947.42	22,875.84
8. Meredith	613,178.00	12,513.07	2.04	3,731.75	9,203.38
9. New Hampton ..	303,954.00	4,893.66	1.61	.....	1,185.95
10. Sanbornton ...	358,560.00	5,378.40	1.50	3,740.65	6,588.08
11. Tilton	755,588.00	10,694.36	1.42	5,059.00	3,767.72
Aggregate	\$8,679,340.00	\$159,231.64	\$1.83	\$145,458.83	\$62,223.96

COUNTY.

Net debt.	Surplus.	(a) Increase or (b) decrease during year.	Cost of public works.	Precinct debt.	Purpose for which debt was incurred.
1. \$16,738.97	<i>a</i> \$5,011.76	{ Pauper account, under estimate of expenses. New city building
2. 601,645.88	.....	<i>a</i> 86,467.24	\$355,000.00	.....
3.	\$2,021.00	<i>c</i> 334.40	.....	.....
4. 34,161.94	.....	<i>b</i> 9,068.58	.....	\$6,186.78
5.	1,103.92	<i>c</i> 565.96	{ Water-works. Sewers.
6.	990.76	<i>c</i> 361.88	.....	.....
7.	865.23	<i>d</i> 342.10	.....	.....
8.	1,307.11	<i>d</i> 423.72	.....	.....
9.	413.46	<i>d</i> 61.10	.....	.....
10. 187,181.48	.....	<i>a</i> 163,253.15	177,500.00	1,685.84
11. 895.24	.....	<i>d</i> 623.46	.....	.....
12. 40,000.00	.....	<i>a</i> 10,000.00	.....	18,000.00
13. 1,742.94	.....	<i>b</i> 2,336.97	.....	.....
\$882,366.45	\$6,701.48	<i>ad</i> \$266,182.53	\$532,500.00	\$25,872.62	
		<i>bc</i> 12,667.79			
		* \$253,514.74			

COUNTY.

Net debt.	Surplus.	(a) Increase or (b) decrease during year.	Cost of public works.	Precinct debt.	Purpose for which debt was incurred.
1. \$389.43	<i>b</i> \$1,407.93	Building roads.
2. 2,386.30	.....	<i>b</i> 815.72	.....	.....
3.	\$1,446.52	<i>b</i> 2,155.37	.....	.....
4.	1,957.63	<i>c</i> 598.26	.....	.....
5. 7,549.49	<i>b</i> 806.16	\$2,200.00	{ Highway damage and lawsuit.
6. 4,455.95	.....	<i>b</i> 1,425.20	.....	.....
7. 80,071.58	.....	<i>a</i> 62,417.39	\$60,258.59	7,639.21
8.	5,471.63	<i>d</i> 644.50	.....	.....
9.	1,185.95	<i>c</i> 32.33	{ Improvements in town.
10.	2,847.43	<i>c</i> 331.24	.....	.....
11. 1,291.28	.....	<i>a</i> 1,385.54	.....	.....
\$96,144.03	\$12,909.16	<i>ad</i> \$64,447.43	\$60,258.59	\$9,839.21	
		<i>bc</i> 7,572.21			
		* \$56,875.22			

c Increase of assets. *d* Decrease of assets. * Net increase.

CARROLL

TOWNS.	Assessed valuation.	Taxes assessed for all purposes.	Tax on \$100.	Total debt.	Assets.
1. Albany	\$87,052.00	\$3,037.76	\$3.49	\$958.97	\$1,274.66
2. Bartlett	358,860.00	7,124.62	1.98 $\frac{1}{2}$	6,263.24	2,590.70
3. Brookfield	128,182.00	2,153.46	1.68	.....	715.91
4. Chatham	95,609.00	1,867.67	1.95	948.13	1,154.29
5. Conway	807,794.00	17,372.17	2.15	21,758.85	4,150.27
6. Eaton	134,796.00	2,992.01	2.22	786.03	413.21
7. Eflingham	232,036.00	6,195.36	2.67	2,973.65	2,371.80
8. Freedom	288,634.00	4,874.31	1.69	1,600.09	974.43
9. Hart's Location.	25,410.00	160.08	.63	.....	200.00
10. Jackson	240,860.00	5,419.35	2.25	1,380.00	553.00
11. Madison	141,284.00	3,164.20	2.24	2,008.41	1,251.86
12. Moultonborough	338,985.00	5,772.14	1.70	.....	1,460.74
13. Ossipee	527,544.00	14,665.73	2.78	10,663.00	3,794.24
14. Sandwich	474,514.00	11,293.43	2.38	32,025.25	1,747.94
15. Tamworth	397,352.00	10,092.74	2.54	5,787.96	3,065.40
16. Tuftonborough .	258,114.00	5,573.41	2.16	9,824.00	840.46
17. Wakefield	608,760.00	9,740.16	1.60	4,050.25	1,681.72
18. Wolfeborough ..	1,181,000.00	22,993.66	1.95	120,751.00	6,213.54
Aggregate	\$6,326,876.00	\$134,492.26	\$2.12 $\frac{1}{2}$	\$221,778.83	\$34,454.17

COUNTY.

Net debt.	Surplus.	(a) Increase or (b) decrease during year.	Cost of public works.	Precinct debt.	Purpose for which debt was incurred.
1.	\$315.69	<i>b</i> \$6,275.69	.....	.....	War.
2. \$3,672.54	.....	<i>b</i> 1,525.41	.....	.....
3.	715.91	<i>c</i> 283.15	.....	.....
4.	206.16	<i>c</i> 106.96	.....	.....
5. 17,608.58	.....	<i>b</i> 6,612.18	.....	.....
6. 372.82	.....	<i>b</i> 258.94	.....	.....	{ Building roads, road machines.
7. 601.85	.....	<i>b</i> 225.34	.....	.....
8. 625.66	.....	<i>b</i> 1,424.56	.....	.....
9.	200.00	<i>d</i> 1.00	.....	.....
10. 827.00	.....	<i>b</i> 408.76	.....	.....	Building bridges.
11. 756.55	.....	<i>b</i> 103.02	.....	.....
12.	1,460.74	<i>c</i> 176.68	.....	.....
13. 6,868.76	.....	<i>b</i> 5,175.44	.....	.....
14. 30,277.31	.....	<i>b</i> 3,715.33	.....	.....
15. 2,722.56	.....	<i>b</i> 554.68	.....	.....	War.
16. 8,983.54	.....	<i>b</i> 2,655.08	.....	.....	War.
17. 2,368.53	.....	<i>b</i> 1,877.27	.....	.....	War bounties.
18. 114,537.46	.....	<i>a</i> 52,883.12	\$57,000.00	\$1,500.00	{ Water-works, war, railroad.
\$190,223.16	\$2,898.50	<i>ad</i> \$52,884.12	\$57,000.00	\$1,500.00	
		<i>bc</i> 31,378.49			
		* \$21,505.63			

c Increase of assets.*d* Decrease of assets.

* Net increase.

MERRIMACK

TOWNS.	Assessed valuation.	Taxes assessed for all purposes.	Tax on \$100.	Total debt.	Assets.
1. Allenstown....	\$642,361.00	\$5,781.04	\$0.90	\$283.62	\$932.95
2. Andover	471,006.00	4,427.46	.94	.....	8,477.73
3. Boscawen	667,012.00	10,484.21	1.57	1,240.00	654.35
4. Bow	419,855.00	3,354.77	.80	2.98	1,497.08
5. Bradford	445,464.00	4,448.86	.99	693.71	1,049.71
6. Canterbury....	489,546.00	5,443.75	1.11	1,428.85	1,300.14
7. Chichester	293,436.00	4,292.08	1.46	5,024.66	1,486.46
8. Concord	10,786,498.00	190,309.88	1.76	787,409.61	48,043.42
9. Danbury	233,332.00	2,565.14	1.10	.....	2,823.07
10. Dunbarton	345,616.00	3,358.83	.97	100.00	1,563.94
11. Epsom	344,880.00	5,349.47	1.55	2,262.90	1,081.54
12. Franklin	2,126,117.00	35,506.15	1.67	125,886.91	10,404.74
13. Henniker	658,821.00	8,294.35	1.25	5,548.00	945.66
14. Hill	170,918.00	2,136.47	1.25	.....	1,521.41
15. Hooksett	678,803.00	7,536.07	1.11	.....	2,669.91
16. Hopkinton	885,878.00	11,078.92	1.25	900.00	4,121.68
17. Loudon	513,470.00	7,188.58	1.40	12,080.00	2,217.98
18. Newbury	279,098.00	3,015.29	1.08	1,428.66	1,100.68
19. New London ..	350,745.00	5,189.94	1.48	.....	1,125.11
20. Northfield	512,262.00	7,719.98	1.50	5,505.00	3,798.22
21. Pembroke	1,201,022.00	10,568.95	.88	.....	2,879.59
22. Pittsfield	1,094,870.00	21,459.45	1.96	57,769.17	11,229.72
23. Salisbury	300,928.00	5,175.94	1.72	3,024.97	1,920.25
24. Sutton	350,292.00	4,390.32	1.25	962.16	2,908.88
25. Warner	680,536.00	8,370.60	1.23	25,694.00	1,966.42
26. Webster	298,577.00	2,508.88	.84	.....	473.06
27. Wilmot	242,862.00	4,007.22	1.65	4,364.17	1,052.95
Aggregate	\$25,484,205.00	\$383,962.60	\$1.51	\$1,041,609.37	\$119,246.65

COUNTY.

Net debt.	Surplus.	(a) Increase or (b) decrease during year.	Cost of public works.	Precinct debt.	Purpose for which debt was incurred.
1.	\$649.33	<i>c</i>	\$162.33	.....
2.	8,477.73	<i>c</i>	429.44	.....
3. \$585.65		<i>a</i>	117.22	\$200.00	{ Roads and bridges.
4.	1,494.10	<i>c</i>	299.76	.....
5.	356.00	<i>b</i>	1,335.02	.....
6. 128.71		<i>b</i>	703.51	.....	Trust funds.
7. 3,538.20		<i>b</i>	1,245.42	.....
8. 739,366.19		<i>a</i>	84,824.09	815,806.34	\$694,228.36 { Water-works, sewers, school- houses, and general pur- poses.
9.	2,823.07	<i>c</i>	762.12	.....
10.	1,463.94	<i>c</i>	278.90	.....
11. 1,181.36		<i>b</i>	67.81	.....
12. 115,482.17		<i>a</i>	75,010.16	4,456.91	Water-works.
13. 4,602.34		<i>b</i>	344.37	.....
14.	1,521.41	<i>d</i>	169.45	.....
15.	2,660.91	<i>c</i>	1,567.21	.....
16.	3,221.68	<i>d</i>	371.90	.....	Trust funds.
17. 9,862.02		<i>b</i>	2,279.87	.....
18. 327.98		<i>b</i>	141.26	.....	Trust funds.
19.	1,125.11	<i>c</i>	149.96	.....
20. 1,706.78		<i>b</i>	1,374.56	.....	War.
21.	2,879.59	<i>d</i>	273.53	.....
22. 46,539.45		<i>b</i>	1,370.16	1,828.28	6,000.00 Railroad, war.
23. 1,104.72		<i>b</i>	1,255.31	.....
24.	1,946.72	<i>d</i>	560.36	.....
25. 23,727.58		<i>a</i>	526.03	.....	{ War, school fund.
26.	473.06	<i>d</i>	293.42	.....
27. 3,311.22		<i>a</i>	211.53	.....	Lawsuit.
\$951,464.37	\$29,101.65	<i>ad</i> \$162,357.69 <i>bc</i> 13,767.01	\$817,834.62	\$704,685.27	
		* \$148,590.68			

c Increase of assets. *d* Decrease of assets. * Net increase.

HILLSBOROUGH

TOWNS.	Assessed valuation.	Taxes assessed for all purposes.	Tax on \$100.	Total debt.	Assets.
1. Amherst.....	\$638,640.00	\$7,853.54	\$1.23	\$500.00	\$1,912.79
2. Antrim.....	527,798.00	11,563.52	2.19	6,295.41	2,122.17
3. Bennington...	234,730.00	3,876.03	1.65	8,400.00	1,495.26
4. Bedford.....	633,258.00	5,703.82	.90	550.00	1,731.93
5. Brookline.....	298,829.00	3,377.47	1.13	.....	4,366.78
6. Deering.....	205,402.00	3,578.92	1.74	1,910.10	1,143.32
7. Francestown..	429,630.00	5,268.26	1.23	1,050.00	1,464.73
8. Goffstown....	1,135,365.00	13,568.17	1.19	49,734.86	1,872.19
9. Greenfield....	253,140.00	4,809.92	1.90	2,800.00	1,158.82
10. Greenville....	695,694.00	7,583.08	1.09	3,203.62	1,330.28
11. Hancock.....	319,070.00	5,221.28	1.63	22,934.66	21,031.55
12. Hillsborough..	984,918.00	16,530.06	1.68	2,755.00	1,592.59
13. Hollis.....	656,680.00	6,566.80	1.00	7,349.44	577.39
14. Hudson.....	656,755.00	7,780.65	1.18	1,350.00	3,563.25
15. Litchfield.....	240,549.00	1,250.83	.52	.....	637.66
16. Lyndeborough	283,976.00	3,975.52	1.40	955.60	1,276.13
17. Manchester....	25,932,044.00	505,679.17	1.95	1,005,367.26	131,575.61
18. Mason.....	342,008.00	3,977.20	1.16	1,443.63	974.22
19. Merrimack....	562,650.00	6,685.57	1.20	617.05	1,744.93
20. Milford.....	1,771,943.00	24,807.33	1.40	93,751.00	4,042.56
21. Mont Vernon..	293,662.00	3,641.40	1.24	500.00	1,311.29
22. Nashua.....	12,085,629.00	216,901.98	1.79	607,450.60	217,073.67
23. New Boston...	585,825.00	8,085.86	1.38	3,350.00	885.02
24. New Ipswich..	547,376.00	8,209.64	1.50	11,367.30	6,506.01
25. Pelham.....	488,308.00	3,906.46	.80	935.00	2,960.86
26. Peterborough.	1,429,784.00	16,442.51	1.15	54,192.56	6,647.54
27. Sharon.....	68,126.00	1,087.85	1.59 ¹ / ₂	225.00	620.37
28. Temple.....	175,286.00	2,340.30	1.33 ¹ / ₂	200.00	297.26
29. Weare.....	707,112.00	9,333.87	1.32	5,580.78	8,972.90
30. Wilton.....	914,068.00	13,711.02	1.50	29,430.05	392.02
31. Windsor.....	41,740.00	412.29	.98	.....	317.49
Aggregate.....	\$54,139,995.00	\$933,730.32	\$1.72	\$1,924,198.92	\$431,598.59

COUNTY.

Net debt.	Surplus.	(a) Increase or (b) decrease during year.	Cost of public work.	Precinct debt.	Purpose for which debt was in- curred.
1.	\$1,412.79	<i>c</i> \$832.38	{ General expen- ses. Railroad sub- sidy.
2. \$4,173.24	.....	<i>b</i> 2,578.20	.....	\$2,105.41
3. 6,904.74	.....	<i>b</i> 733.01	.....	.....
4.	1,181.93	<i>b</i> 1,394.30	.....	.....
5.	4,366.78	<i>c</i> 448.96	.....	.....
6. 766.78	.....	<i>b</i> 257.45	.....	.....
7.	414.73	<i>c</i> 370.62	.....	.....
8. 47,862.67	<i>a</i> 40,631.72	\$42,000.00	41,163.67	{ Water-works in precinct and rebuilding town hall.
9. 1,641.18	<i>b</i> 1,700.41	{ Water pipes and hydrants. Gratuity to rail- roads.
10. 1,873.34	.....	<i>b</i> 1,863.37	.....	.....
11. 1,903.11	<i>b</i> 1,692.25	{ Repairs on high- ways.
12. 1,162.41	.....	<i>b</i> 2,101.59	.....	.....
13. 6,772.05	<i>a</i> 1,769.20	{ Water-works, sewers, bridges, and buildings.
14.	2,213.25	<i>c</i> 1,659.57	.....	.....
15.	637.66	<i>c</i> 8.25	.....	.....
16.	320.53	<i>b</i> 363.09	.....	.....
17. 873,791.65	.....	<i>a</i> 15,414.88	2,276,490.00	.....
18. 469.41	.....	<i>a</i> 241.49	.....	.....
19.	1,127.88	<i>c</i> 50.06	.....	.....
20. 89,708.44	<i>a</i> 17,990.45	66,888.00	{ Water-works and library.
21.	811.29	<i>d</i> 10.44	{ Railroad loan and floating debt. Building town house.
22. 390,376.93	.....	<i>a</i> 51,301.99	.....	.....
23. 2,464.98	<i>b</i> 33.62	400.00	{ Railroad and schoolhouse.
24. 4,861.29	.....	<i>b</i> 1,479.43	.....	.....
25.	2,025.86	<i>c</i> 391.98	.....	.....
26. 47,545.02	.....	<i>b</i> 4,299.80	.....	3,000.00
27.	395.37	<i>c</i> 125.37	.....	.....
28.	97.26	<i>d</i> 149.79	.....	.....
29.	3,392.12	<i>c</i> 693.28	.....	.....
30. 29,038.03	<i>b</i> 4,125.45	War.
31.	317.49	<i>c</i> 9.62	.....	.....
\$1,511,315.27	\$18,714.94	<i>ad</i> \$127,509.96	\$2,385,778.00	\$46,269.08	
		<i>bc</i> 27,212.06			
		* \$100,297.90			

c Increase of assets.*d* Decrease of assets.

* Net increase.

CHESHIRE

TOWNS.	Assessed valuation.	Taxes assessed for all purposes.	Tax on \$100.	Total debt.	Assets.
1. Alstead.....	\$509,319.00	\$6,111.84	\$1.20	\$5,216.94	\$1,459.20
2. Chesterfield....	658,659.00	8,165.37	1.24	7,688.52	2,848.60
3. Dublin.....	507,519.00	5,379.82	1.06	13,302.65	16,181.19
4. Fitzwilliam....	473,779.00	5,116.81	1.08	341.72	1,315.13
5. Gilsun.....	280,447.00	2,943.00	1.05	2,104.52	927.76
6. Harrisville.....	304,909.00	4,639.03	1.52	15,000.00	191.34
7. Hinsdale.....	1,002,042.00	17,535.88	1.75	14,729.45	9,928.93
8. Jaffrey.....	800,834.00	9,718.01	1.20	12,606.67	2,493.63
9. Keene.....	6,359,066.00	86,895.93	1.36	386,055.00	97,426.00
10. Marlow.....	286,168.00	1,530.93	.53 ¹ / ₂	.....	1,692.47
11. Marlborough..	619,196.00	7,431.04	1.20	8,344.17	2,541.63
12. Nelson.....	138,745.00	1,956.56	1.41	299.72	501.41
13. Richmond.....	229,889.00	3,171.64	1.38	536.23	1,685.62
14. Rindge.....	506,977.00	5,069.77	1.00	.....	1,376.98
15. Roxbury.....	69,034.00	897.44	1.30	.....	551.00
16. Swanzey.....	721,277.00	10,097.94	1.40	1,638.67	3,707.94
17. Sullivan.....	145,003.00	1,899.56	1.31	1,217.23	1,519.24
18. Surry.....	151,583.00	1,604.79	1.05	.....	1,050.00
19. Stoddard.....	175,786.00	3,198.90	1.82	6,668.16	3,344.74
20. Troy.....	459,799.00	5,888.18	1.28	3,909.12	3,085.74
21. Walpole.....	1,522,164.00	19,159.12	1.26	5,165.50	2,358.97
22. Westmoreland	495,967.00	4,265.31	.86	2,172.93	2,117.64
23. Winchester....	1,444,338.00	22,417.29	1.55	18,912.25	2,521.88
Aggregate	\$17,871,500.00	\$235,094.16	\$1.31 ¹ / ₂	\$505,909.45	\$160,827.04

SULLIVAN

TOWNS.	Assessed valuation.	Taxes assessed for all purposes.	Tax on \$100.	Total debt.
1. Acworth.....	\$308,632.00	\$4,936.56	\$1.60	\$3,025.00
2. Cornish.....	477,504.00	5,975.04	1.25	708.07
3. Croydon.....	206,081.00	2,977.87	1.44 ¹ / ₂	417.29
4. Charlestown....	830,611.00	9,650.00	1.16	1,020.00
5. Claremont.....	2,799,054.00	48,984.31	1.75	131,704.00
6. Goshen.....	149,365.00	2,364.66	1.58	.....
7. Grantham.....	143,143.00	2,867.70	2.00	6,274.64
8. Langdon.....	237,642.00	2,143.50	.90	.....
9. Lempster.....	187,180.00	3,517.99	1.88	1,901.60
10. Newport.....	1,367,906.00	27,084.50	1.98	105,385.15
11. Plainfield.....	538,216.00	7,212.00	1.34	9,006.98
12. Springfield.....	157,941.00	4,671.45	2.95	14,089.22
13. Sunapee.....	383,694.00	6,645.94	1.73	11,991.31
14. Unity.....	243,422.00	3,602.62	1.48	833.66
15. Washington.....	289,914.00	4,348.70	1.50	30.00
Aggregate.....	\$8,320,305.00	\$136,982.93	\$1.65	\$286,386.92

COUNTY.

Net debt.	Surplus.	(a) Increase or (b) decrease during year.	Purpose for which debt was incurred.
1. \$3,757.74		<i>b</i> \$767.79	Erection of new town building.
2. 4,839.92		<i>b</i> 311.37	
3. \$2,878.54		<i>c</i> 998.09	Trust funds.
4. 973.41		<i>c</i> 419.82	
5. 1,176.76		<i>b</i> 630.17	
6. 14,808.66		<i>a</i> 11.94	Gratuity to railroad.
7. 4,800.52		<i>b</i> 5,087.57	
8. 10,113.04		<i>a</i> 992.70	New highway and R. R. gratuity.
9. 288,629.00		<i>a</i> 21,707.00	Re-laying water-pipes.
10. 1,692.47		<i>c</i> 98.68	
11. 5,802.54		<i>b</i> 2,444.94	
12. 201.69		<i>d</i> 828.85	
13. 1,149.39		<i>d</i> 307.86	
14. 1,376.98		<i>c</i> 598.52	
15. 551.00		<i>c</i> 326.00	
16. 2,069.27		<i>c</i> 1,346.94	
17. 302.01		<i>b</i> 484.64	
18. 1,050.00		<i>c</i> 202.87	
19. 3,323.42		<i>b</i> 1,393.14	
20. 823.38		<i>b</i> 226.75	
21. 2,806.53		<i>b</i> 764.45	Repairing town-house.
22. 55.29		<i>b</i> 585.21	
23. 16,390.37		<i>a</i> 7,661.50	Library and ordinary expenses.
\$357,327.17	\$12,244.76	<i>ad</i> \$31,509.85	
		<i>bc</i> 16,686.95	
		* \$14,822.90	

COUNTY.

Assets.	Net debt.	Surplus.	(a) Increase or (b) decrease during year.	Precinct debt.
1. \$1,990.42	\$1,034.58		<i>b</i> \$936.49	
2. 1,802.43		\$1,094.36	<i>c</i> 319.77	
3. 426.92		9.63	<i>b</i> 364.40	
4. 1,102.00		\$2.00	<i>d</i> 141.05	
5. 34,081.97	97,622.03		<i>b</i> 7,473.92	
6. 661.12		661.12	<i>c</i> 448.72	
7. 1,233.89	5,040.75		<i>b</i> 242.70	
8. 1,051.66		1,051.66	<i>c</i> 214.66	
9. 1,498.13	403.47		<i>b</i> 661.18	
10. 2,389.12	102,996.03		<i>b</i> 1,073.14	
11. 4,495.43	4,511.55		<i>b</i> 1,239.88	
12. 1,111.35	12,977.87		<i>b</i> 617.08	
13. 2,543.68	9,447.63		<i>c</i> 307.33	\$121.04
14. 777.37	56.29		<i>b</i> 205.18	
15. 687.39		657.39	<i>b</i> 1,217.12	
\$55,852.88	\$234,090.20	\$3,556.16	<i>bc</i> \$15,321.57	\$121.04
			<i>ad</i> 141.05	
			† \$15,180.52	

c Increase of assets. *d* Decrease of assets. * Net increase. † Net decrease.

GRAFTON

TOWNS.	Assessed valuation.	Taxes assessed for all purposes.	Tax on \$100.	Total debt.	Assets.
1. Alexandria ...	\$224,465.00	\$4,791.90	\$2.13	\$251.06	\$1,904.16
2. Ashland.....	464,105.00	6,795.67	1.46	3,051.51	973.06
3. Bath.....	524,330.00	8,886.38	1.69	10,600.00	4,052.43
4. Benton.....	96,080.00	2,012.92	2.09	1,939.43	1,937.11
5. Bethlehem....	706,989.00	13,388.22	1.89	12,600.00	2,782.50
6. Bridgewater..	115,833.00	2,664.10	2.30	3,600.00	918.53
7. Bristol.....	668,542.00	13,764.13	2.06	2,551.00	695.20
8. Campton.....	345,250.00	8,286.00	2.40	19,410.26	4,318.43
9. Canaan.....	517,144.00	8,553.01	1.65	3,340.82	1,172.37
10. Dorchester...	118,086.00	3,542.58	3.00	18,002.52	4,555.55
11. Easton.....	113,839.00	1,707.76	1.50	490.52	1,371.55
12. Ellsworth....	29,020.00	739.63	2.55	586.40	700.48
13. Enfield.....	596,315.00	6,489.17	1.09	4,457.25	5,772.91
14. Franconia....	382,276.00	5,351.86	1.40	4,647.25	1,136.13
15. Grafton.....	295,536.00	3,907.49	1.35	1,251.68	2,137.66
16. Groton.....	115,300.00	2,928.27	2.54	3,094.91	1,579.54
17. Hanover.....	1,039,442.00	12,260.43	1.18	3,140.48	3,392.83
18. Haverhill....	1,269,060.00	19,182.78	1.51	771.72	4,503.68
19. Hebron.....	89,656.00	1,282.00	1.43	95.53	709.76
20. Holderness....	226,934.00	3,857.88	1.70	.....	1,633.51
21. Landaff.....	229,784.00	3,122.21	1.36	.....	1,023.21
22. Lebanon.....	2,219,108.00	32,105.47	1.45	79,187.32	8,013.78
23. Lincoln.....	58,818.00	623.47	1.06	.....	151.99
24. Lisbon.....	969,917.00	19,074.98	1.96½	35,400.00	1,120.66
25. Littleton....	1,554,063.00	31,014.11	1.98	5,503.51	3,664.49
26. Livermore....	99,700.00	1,000.00	1.00	.....	.....
27. Lyman.....	189,188.00	2,870.47	1.52	435.53	661.64
28. Lyme.....	470,434.00	4,453.94	.95	3,030.84	4,237.29
29. Monroe.....	289,228.00	3,333.16	1.15	8,059.35	565.33
30. Orange.....	69,050.00	1,748.66	2.53	723.21	1,362.39
31. Orford.....	418,334.00	6,970.95	1.66½	4,841.81	3,785.58
32. Piermont....	359,162.00	6,483.10	1.80	3,694.33	913.13
33. Plymouth....	751,806.00	13,070.54	1.74	1,729.07	2,092.05
34. Rumney.....	286,188.00	4,292.82	1.50	.....	3,582.30
35. Thornton....	181,799.00	6,472.56	3.56	13,800.00	5,220.93
36. Warren.....	275,314.00	3,579.34	1.30	37.16	2,079.93
37. Waterville....	40,032.00	961.60	2.40	.....	844.35
38. Wentworth...	213,336.00	4,202.71	1.97	1,850.00	1,583.78
39. Woodstock....	143,066.00	4,224.67	2.95	12,957.32	3,990.70
Aggregate	\$16,756,529.00	\$280,087.03	\$1.67	\$265,221.79	\$91,140.92

COUNTY.

Net debt.	Surplus.	(a) Increase or (b) decrease during year.	Cost of public works.	Precinct debt.	Purpose for which debt was in- curred.	
1.	\$1,653.10	<i>c</i>	\$279.36	.....	
2. \$2,078.45	.....	<i>a</i>	348.58	.....	Sidewalks.
3. 6,547.57	.....	<i>b</i>	1,938.99	.....	War.
4. 2.32	.....	<i>a</i>	252.03	.....	Highways and bridges.
5. 9,817.50	.....	<i>b</i>	912.21	.....	
6. 2,771.47	.....	<i>b</i>	243.51	.....	
7. 1,855.80	.....	<i>a</i>	588.97	.....	Sewerage.
8. 15,091.83	.....	<i>b</i>	3,394.23	.....	
9. 2,168.45	.....	<i>b</i>	1,305.18	.....	Damages on highway.
10. 13,446.97	.....	<i>b</i>	1,008.07	.....	War.
11.	881.03	<i>c</i>	234.22	.....	
12.	114.08	<i>b</i>	563.21	.....	War.
13.	1,315.66	<i>c</i>	96.01	.....	
14. 3,511.12	.....	<i>b</i>	228.28	.....	
15.	885.98	<i>c</i>	403.62	.....	
16. 1,515.37	.....	<i>b</i>	217.44	.....	
17.	252.35	<i>b</i>	912.68	.....	Trust funds.
18.	3,731.96	<i>c</i>	21.93	.....	
19.	614.23	<i>d</i>	1,064.89	.....	
20.	1,633.51	<i>c</i>	608.21	.....	
21.	1,023.21	<i>d</i>	203.19	.....	
22. 71,173.54	<i>a</i>	17,939.81	\$7,004.28	\$64,734.27	Sewers, water- works.
23.	151.99	<i>d</i>	46.39	
24. 34,279.34	<i>b</i>	763.05	414.21	25,000.00	Iron bridge and school debt.
25. 1,839.02	<i>a</i>	1,223.35	1,140.00	
26.	
27.	226.11	<i>c</i>	102.97	
28.	1,206.45	<i>c</i>	81.38	
29. 7,494.02	<i>a</i>	450.18	Lawsuit.
30.	639.18	<i>c</i>	118.35	
31. 1,056.23	<i>a</i>	1,588.07	Town expenses.
32. 2,781.20	<i>b</i>	2,658.48	War.
33.	362.98	<i>b</i>	445.89	1,180.00	School Dist.No.2.
34.	3,582.30	<i>c</i>	267.37	
35. 8,579.07	<i>b</i>	2,254.93	War.
36.	2,042.77	<i>d</i>	678.55	
37.	844.35	<i>c</i>	224.32	
38. 266.22	<i>b</i>	2,328.75	War.
39. 8,966.62	<i>b</i>	1,450.00	974.11	
\$195,242.11	\$21,161.24	<i>ad</i>	\$24,383.92	\$7,418.49	\$93,028.38	
		<i>bc</i>	23,062.64			
		* \$1,321.28				

c Increase of assets.*d* Decrease of assets.

* Net increase.

TOWNS.	Assessed valuation.	Taxes assessed for all purposes.	Tax on \$100.	Total debt.	Assets.
1. Berlin	\$1,183,184.00	\$20,350.76	\$1.72	\$34,576.52	\$8,692.24
2. Carroll	312,709.00	5,107.55	1.63	1,493.30	1,747.04
3. Clarksville	124,952.00	2,336.60	1.87	820.05	218.87
4. Colebrook	793,113.00	9,329.40	1.17½	.....	2,525.92
5. Columbia	275,358.00	5,149.66	1.87	1,481.87	1,230.38
6. Dalton	164,077.00	5,742.70	3.50	25,559.03	6,884.91
7. Dummer	157,032.00	3,531.67	2.25	5,372.74	1,199.41
8. Errol	117,344.00	2,816.37	2.40	2,826.33	1,243.01
9. Gorham	474,710.00	8,813.97	1.86	1,516.50	1,111.13
10. Jefferson	287,172.00	7,753.64	2.70	3,100.00	1,192.37
11. Lancaster	1,241,215.00	25,550.50	2.06	16,533.59	5,213.10
12. Milan	253,900.00	6,343.20	2.50	13,661.47	3,627.10
13. Northumberland	574,914.00	9,198.62	1.60	450.04	431.71
14. Pittsburg	303,227.00	5,761.09	1.90	2,963.62	2,356.96
15. Randolph	64,070.00	1,345.49	2.10	1,805.55	1,424.23
16. Shelburne	130,850.00	2,368.35	1.81	438.87	719.09
17. Stark	265,284.00	3,926.23	1.48	4,828.35	3,398.33
18. Stratford	413,823.00	4,860.86	1.17	2,129.09	2,689.72
19. Stewartstown	370,619.00	6,448.86	1.74	4,584.03	1,019.22
20. Whitefield	637,258.00	11,496.72	1.80	8,743.94	5,102.90
UNINCORPORATED PLACES.					
Bean's Grant	5,000.00	22.27	.42	.....	.....
Bean's Purchase	60,000.00	256.12		.....	.....
Cambridge	50,000.00	211.62		.....	.....
Chandler's Purchase	2,000.00	11.13		.....	.....
Crawford's Purchase	30,000.00	122.52		.....	.....
Cutts' Grant	7,500.00	33.40		.....	.....
Dixville	25,000.00	111.38		.....	.....
Dix's Grant	8,000.00	33.40		.....	.....
Erving's Grant	5,000.00	22.27		.....	.....
Green's Grant	55,000.00	233.90		.....	.....
Gilmanton and Atkinson Academies' Grant	30,000.00	122.52		.....	.....
Kilkenny	40,000.00	167.08		.....	.....
Low and Burbank's Grant	20,000.00	89.02		.....	.....
Martin's Location ..	5,000.00	22.27		.....	.....
Millsfield	40,000.00	167.08		.....	.....
Odell	60,000.00	256.12		.....	.....
Pinkham's Grant ..	5,000.00	22.27		.....	.....
Sargent's Purchase ..	30,000.00	122.52		.....	.....
Second Coll. Grant ..	40,000.00	167.08		.....	.....
Success	50,000.00	211.63		.....	.....
Thompson and Meserve's Purchase ..	30,000.00	122.52		.....	.....
Wentworth's Loc'n ..	30,000.00	122.52		.....	.....
Aggregate	\$8,772,311.00	\$150,882.88	\$1.72	\$132,884.89	\$52,027.64

COUNTY.

[illegible]

c Increase of assets. *d* Decrease of assets. * Net increase.

RECAPITULATION

COUNTIES.	Assessed valuation.	Taxes assessed for all purposes.	Tax on \$100.	Total debt.
1. Rockingham.....	\$25,000,556.00	\$400,067.93	\$1.60	\$816,687.84
2. Strafford.....	21,088,494.00	382,644.59	1.81	1,368,610.62
3. Belknap.....	8,679,340.00	159,231.64	1.83	145,458.83
4. Carroll.....	6,326,876.00	134,492.26	2.12 $\frac{1}{2}$	221,778.83
5. Merrimack.....	25,484,205.00	383,962.60	1.51	1,041,609.37
6. Hillsborough.....	54,139,995.00	933,730.32	1.72	1,924,198.92
7. Cheshire.....	17,871,500.00	235,094.16	1.31 $\frac{1}{2}$	505,909.45
8. Sullivan.....	8,320,305.00	136,982.93	1.65	286,386.92
9. Grafton.....	16,756,529.00	280,087.03	1.67	265,221.79
10. Coös.....	8,772,311.00	150,882.88	1.72	132,884.89
Aggregate.....	\$192,449,111.00	\$3,197,176.34	\$1.661	\$6,708,747.46

BY COUNTIES.

Assets.	Net debt.	Surplus.	(a) Increase or (b) decrease during year.	Cost of pub- lic works.	Precinct debt.
1. \$318,873.77	\$505,950.43	\$8,136.36	<i>a</i> \$1,265.28	\$53,138.79	.....
2. 492,945.65	882,366.45	6,701.48	<i>a</i> 253,514.74	532,500.00	\$25,872.62
3. 62,223.96	96,144.03	12,900.16	<i>a</i> 56,875.22	60,258.59	9,839.21
4. 34,454.17	190,223.16	2,898.50	<i>a</i> 21,505.63	57,000.00	1,500.00
5. 119,246.65	951,464.37	29,101.65	<i>a</i> 148,590.68	817,834.62	704,685.27
6. 431,598.59	1,511,315.27	18,714.94	<i>a</i> 100,297.90	2,385,778.00	46,269.08
7. 160,827.04	357,327.17	12,244.76	<i>a</i> 14,822.90	.....	.....
8. 55,852.88	234,090.20	3,556.16	<i>b</i> 15,180.52	.....	121.04
9. 91,140.92	195,242.11	21,161.24	<i>a</i> 1,321.28	7,418.49	93,028.38
10. 52,027.64	84,477.76	3,620.51	<i>a</i> 3,660.39	906.32	2,716.50
\$1,819,191.27	\$5,008,600.95	\$119,044.76	<i>a</i> \$601,854.02	\$3,914,834.81	\$884,032.10
			<i>b</i> 15,180.52		
			* \$585,673.50		

* Net increase.

STATEMENT OF THE FINANCIAL CONDITION

*Of the several counties on the first day of May, 1891, compiled in accordance with the provisions of chapter 58 of the Pamphlet Laws of 1887.**

COUNTIES.	Total debt.	Cash on hand.	Net debt.	Valuation of county buildings and farm.	Valuation of stock and personal property.	Purpose for which debt was incurred.
Rockingham ...	\$45,000.00	\$4,078.87	\$40,921.13	\$50,000.00	\$16,761.89	Funded debt and new county buildings.
Strafford.....	170,000.00	13,323.05	156,676.95	50,000.00	16,297.35	Funded debt, building jail and county building.
Belknap	25,123.62	227.69	24,895.93	32,000.00	8,287.82	Buying land, repairs, poor.
Carroll.....	49,907.86	6,840.74	43,067.12	20,000.00	5,629.11	County farm and buildings.
Merrimack	73,000.00	2,463.77	70,536.23	40,000.00	13,785.94	Building and repairs.
Hillsborough...	163,080.65	10,465.89	152,614.76	68,875.00	32,697.70	To defray county expenses.
Cheshire.....	25,000.00	2,803.18	22,196.82	40,000.00	6,380.91	Building jail and house of correction.
Sullivan.....	9,000.00	1,306.82	7,693.18	28,458.23	8,832.45	Copying records, pauper expenses.
Grafton.....	61,839.55	13,164.73	48,674.82	40,000.00	8,906.06	County buildings and accrued expenses for supporting paupers.
Cos.	22,479.14	6,862.24	15,616.90	20,000.00	8,053.95	County buildings.
Totals.....	\$644,430.82	\$61,536.98	\$582,893.84	\$389,333.23	\$125,633.18	

* Chapter 30, Public Statutes, makes the fiscal year for the counties to end December 31 of each year. No reports were made for time between May 1, 1891 and December 31, 1891, but the reports for this period will be included in those made December 31, 1892.

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REPORT

OF THE

ADJUTANT-GENERAL

OF THE

STATE OF NEW HAMPSHIRE

NOVEMBER 1, 1891, TO OCTOBER 31, 1892.

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ADJUTANT-GENERAL'S REPORT.

STATE OF NEW HAMPSHIRE,
ADJUTANT-GENERAL'S OFFICE.
CONCORD, October 31, 1892.

His Excellency Hiram A. Tuttle, Governor and Commander-in-Chief, and the Honorable Council:

GENTLEMEN, — I have the honor to present herewith the annual report of this department for the year ending October 31, 1892.

No organizations have been disbanded during the year past and the Brigade of the New Hampshire National Guard remains substantially as it was at the date of my last report, except that the vacancy then existing in the Third Regiment has been filled by the organization, May 28, of a company at Laconia to take the place of the Wolfeborough company, and designated as Company K, giving the Brigade the maximum number of organizations provided for by law, viz.: twenty-four companies of infantry (three regiments of eight companies each), one four-gun battery, and one troop of cavalry.

The aggregate strength of the force is 124 commissioned officers, and 1,161 enlisted men. The maximum number allowed by law is 127 commissioned officers, and 1,535 enlisted men.

UNIFORMS AND EQUIPMENTS.

The uniforms, arms, and equipments are mostly in very good condition with the exception of overcoats, which are of the old pattern and nearly all badly worn and faded, and the trousers, many of which will soon have to be replaced.

The cartridge boxes, while answering the purpose fairly well, are also obsolete, and it would be well to adopt in their place either the McKeever box, or the cartridge belt.

Nothing has been drawn from the Quartermaster's Department, U. S. A., during the year, and from the Ordnance Department only ammunition for rifle practice, and there is now a balance to the credit of the State of about four thousand dollars, against which clothing or equipments can be drawn.

ENCAMPMENT.

The encampment for 1892 was for seven days, June 25 to July 1, inclusive, the troops being paid in full for the entire time.

Although the expense was considerable I am satisfied that the money was well expended, and that the benefit to be derived from a seven-days' encampment is more than proportionate to that received during a shorter tour of camp duty.

Your Excellency and staff went into camp June 27, remaining nearly all the rest of the week.

The presence of the Commander-in-Chief is always an incentive to officers and men to the better performance of their duties.

At the request of this office the War Department detailed as Instructor and Inspector, Captain Edward

S. Godfrey, Seventh United States Cavalry, whose strict attention to his duties, thoughtful suggestions, and kindly criticisms, won the friendship of all with whom he came in contact.

Captain Godfrey, having been a member of the board which prepared the drill regulations recently adopted by the Army and National Guard, was enabled to answer satisfactorily many perplexing questions naturally arising in the study of new tactics.

I respectfully call your attention to the report of Captain Godfrey, as made to the Adjutant-General of the Army, and also to the report of the encampment made by Brig. Gen. Albert N. Dow, Inspector-General of New Hampshire, both of which accompany this, and contain information and suggestions of much value.

General Dow's report of the armory inspections, showing the relative standing of the several organizations, is also respectfully forwarded for your information.

GENERAL REMARKS.

As the practice season on the range does not close until November 30, I am unable, unfortunately, to furnish, at this time, the report of Maj. J. P. Wellman, Inspector of Rifle Practice, for 1892, but the report for 1891, previously published in General Orders, is forwarded herewith.

I have no doubt the report for the current season will show marked improvement in shooting and a considerable increase in the number of qualified marksmen.

The new drill regulations now in use provide for battalion formation with an adjutant and sergeant-major to each battalion in a regiment, thus requiring more officers to a regiment than now allowed by the present law.

I am not fully satisfied as to whether it will be better

to reorganize the force into two regiments of three four-company battalions each, or to retain the present organization of three regiments of two four-company battalions each; but in either case if the requisite number of adjutants and sergeant-majors are to be regularly commissioned and appointed, a change in the laws is necessary.

A strong effort will undoubtedly be made next year to have, during the World's Columbian Exposition, an encampment at Chicago of the United States Army and the National Guard and Militia of the states.

Congress will undoubtedly be asked to assist with an appropriation to cover a part of the expense, and if the encampment is brought about the New Hampshire National Guard should not be conspicuous by its absence; the entire Brigade should be present and I suggest that instead of the regular State encampment next June, the encampment for 1893 be ordered at Chicago, in October or whenever the proposed grand encampment shall be held, and that the money which would otherwise be used for a State encampment be taken to defray so far as possible the expense of sending the Brigade to Chicago.

At the request of Your Excellency, Capt. James Miller, Second United States Infantry, was detailed by the War Department in June last for a two years' tour of duty with our state troops, and duly reported; but owing to a variety of causes, the service which Captain Miller has been ready and willing to perform, could not, during the summer and autumn, be made available.

The events of the past summer prove conclusively that an organized militia force is a necessity, and the promptness with which the troops of New York, Pennsylvania, Tennessee, and Idaho responded when called

upon to support and aid the civil authorities in maintaining the laws, as well as the splendid manner in which the duty was performed, must be a source of pride to every National Guardsman throughout the country.

It is evidence of the strongest kind that the militia can be relied upon when needed, and should effectually silence those who are constantly complaining that it is a useless expense.

I had hoped that at this time the revised record of the soldiers and sailors of New Hampshire, in the war of the Rebellion, would be in print, but owing to delay in getting important information from the departments at Washington and to other unavoidable causes it will be several months before it can be given to the printer. It is nearing completion, but I desire to have it as nearly perfect and complete in every particular as it is possible to make it.

The following reports and papers are respectfully forwarded for your consideration :

Report of Inspector-General — Armory Inspections.

Report of Inspector-General — Encampment 1892.

Report of Capt. Edward S. Godfrey, Seventh Cavalry, U. S. A.

Report of Inspector of Rifle Practice with list of marksmen and sharpshooters, season of 1891.

Return of New Hampshire National Guard showing strength and location of each organization.

Register of commissioned officers October 31, 1892.

Resignations and discharges of commissioned officers during the year.

Commissions issued during the year.

Enlisted men dropped as deserters during the year.

In closing my report permit me to express my hearty appreciation of the unfailing courtesy and consideration with which I have been treated in my official intercourse with Your Excellency and the members of your Executive Council.

Very respectfully,

Your obedient servant,

A. D. AYLING,

Adjutant-General.

REPORTS OF INSPECTOR-GENERAL

STATE OF NEW HAMPSHIRE,
INSPECTOR-GENERAL'S OFFICE,
EXETER, June 26, 1892.

GEN. A. D. AYLING,

Adjutant-General, Concord, N. H.:

SIR, — I have the honor to make the following report of duty performed in accordance with General Orders, No. 1, c. s.

Maj. Charles E. Faxon, Assistant Inspector-General, reported to me by letter for instruction, and inspected Companies K of the First Regiment, K and D of the Second, and the Third Regiment Band. He reports all prospering and doing hard work. I found last year that there was hardly time for two inspections in one evening without danger of being pressed for time. As I intended this year to spend more time on guard duty, and also to take up the extended order, I judged still more time would be needed, and so arranged but one inspection in an evening, with the exception of the evening at Keene.

By roster the First Regiment came first, followed respectively by the Second and Third.

Colonel Lane accompanied me at all the inspections in the First Regiment, and Assistant Surgeon Starr at all except Company F. Colonel Metcalf was with me at Farmington, Rochester, and Keene, and Lieutenant-

Colonel Tolles represented the regiment at Nashua. Colonel Sanborn was present at all the inspections in his command.

FIRST REGIMENT.

Company A. The company was not so far advanced in the new regulations as most of the best companies, with which companies it should certainly be classed. The weakest spot was the knowledge of guard duty, to which too little time has been devoted. The company has changed its quarters since last year, and now occupies with Company D, the basement of the new city building. The quarters for some reasons are to be preferred to the ones previously occupied, but they are hardly suited to the purpose, and it remains to be seen if they are sufficiently dry for the safe keeping of the guns.

Company B. Inspection very creditable. In many of the movements the marching had to be simulated, as the fringe of spectators, though occupying a depth of not more than six feet, reduced the actual drill space to about twelve feet wide. The same vigor and precision the company showed under "Upton's" were still present. Any officers would deserve credit for maintaining even an indifferent organization for several years without an armory, and credit is certainly due Captain Shea for maintaining a well drilled company, and keeping the men interested without a drill-room.

Company C. The company has been unfortunate, and is below the standard which would entitle it to continue its existence, were it not for the fact that the circumstances which have caused this state of affairs have been largely beyond control, and also because there seems to be a better prospect. There is no doubt that

the poor showing was due in part to the fact that the company has had no drill-room since its organization. This seems to be shown by the fact that the inspection was very creditable upon such points as the company was able to take up in its property room. The men were well instructed in guard duty, and very steady during the ceremony. The material appears excellent, and I have no doubt that with a suitable armory there would quickly be a change for the better. If such quarters cannot be secured, it would not seem expedient to support the company longer in its present condition, for it is below what the State expects not only, but what the State will allow.

Company D. The inspection was very creditable. There was evidence of hard work, and the per cent of attendance at the weekly drills, for the six months previous to the inspection, verifies this evidence. Perceptible progress has been made since last year. The signal detachment connected with the company, under the supervision of Capt. Charles Francis Sawyer, brigade commissary, is proficient, and as efficient as should be expected considering the small number of men. The addition of a few more men would benefit the detachment, without weakening the company.

Company E. The company under Captain Tebbetts started out with a heavy handicap. The former captain left the company about three hundred dollars in debt. This debt Captain Tebbetts assumed in taking command. When the change of officers took place most of the non-commissioned officers had left the company, together with many of the men. Not all the company's books were turned over to Captain Tebbetts, and records were in bad shape and incomplete. The company is gradually overcoming the handicap. The

debt has been reduced one half, and there is indication that the company will continue to improve. The per cent of attendance at camp is taken from the morning report, as that was all I had to refer to, not being able to see the first sergeant's roll-book; yet this per cent is incorrect, as was shown at Captain Wilson's court-martial. As there is no way of finding the correct per cent at camp, I have allowed it as shown in the morning report, with this explanation.

Company H. The ceremony was not very well understood. The drill showed a good beginning in the new regulations. The inspection proper and the drill, though creditable, were neither so good as last year. The company is weak in guard duty, though being able to speak English but imperfectly, the men understood better than they could explain, as I know from what I have seen of this company's sentinels on guard.

Company F. The company was moribund at the time set for the inspection. Several leading citizens having offered financial support, and a number of new men having been enlisted, more interest was shown, and, by request, I postponed the inspection, to give an opportunity to reorganize. The inspection was made June 2. Company B had several times sent down a sergeant to drill the company; excepting this assistance, Captain McIntire had had all the work to do alone, as the company was without lieutenants. The regulations were not very well interpreted, and at times movements were executed as prescribed in "Upton's." It would not be just to judge of the situation wholly by the appearance of the company, because it was practically a new one. In spite of the poor showing, there still seems to be a chance for a company, as there appears to be enough material. The main requisite now is good officers.

This company has been in a similar condition several times already, and if the present effort does not result in very material improvement, I would recommend disbandment.

SECOND REGIMENT.

Company C. Inspection and drill excellent. Arms are now kept in the drill-room, and I have seen none in better condition. The other two companies here intend to remove their guns from the basement as soon as cases can be made. The basement has proved to be too damp.

Company E. The company would doubtless take more interest if a suitable armory could be secured. A certain laxity was apparent, which ought to be overcome. It was seen in the conditions of records, part of which had been destroyed; it was shown in the replies of several men who said they had been in the company a year and had had no instruction in guard duty; and it was also shown in the failure to be prepared for inspection until a half-hour after the hour set. The inspection was creditable.

Company F. The inspection proper was very good, with the exception of some unsteadiness in ranks. The drill was creditable excepting the firings. The company has suffered severely this year from loss of men, caused by dullness in the shoe business, from which most of the men are recruited. Fines have been imposed for absence from camp and inspection, and Captain Pitman says with salutary effect.

Companies G and H. This was a battalion inspection. The ceremony and drill compared favorably with those of last year, and previous years. Excellence is always expected here, and the expectation is always

realized. The exercises in squad leading were taken up by two corporals, who showed an intelligent interpretation of this work. The per cent of attendance at weekly drills, as will be seen, is very high. There were about twenty-five men in each company who had not been absent from drill for six months previous to the inspection. Such results are rarely attained.

Company I. This inspection was one of the best. The company had no captain, and paraded under command of First Lieutenant Goodspeed, who had been elected captain, but had not received his commission. There is no doubt that the company will prosper under his command.

THIRD REGIMENT.

Company A. The inspection proper was good, the drill no more than fair. The appearance of the company can perhaps be accounted for by the per cent of attendance at weekly drills. So far as I could learn, but little interest is being shown. I do not think the result of the inspection would warrant me in recommending disbandment at once, yet it may be advisable to do so later, if the per cent of attendance is significant of disintegration, as it seems to be. The absence of the first lieutenant from the inspection I understood was due to lack of confidence and ability. The company is equal in physique to any in the brigade.

Company C. Remembering the appearance last year, the showing made this year was gratifying. The officers are better tacticians, and the company shows very perceptible improvement. The record is marred by the poor knowledge of guard duty. This work had been taken up but twice during the winter. In the annual competition in the manual of arms Private

Robert H. Rolfe proved the best man, and is entitled to wear the company medal for the ensuing year.

Company D. The inspection as a whole was not very encouraging; the most discouraging feature being the absence of fifty per cent of the enlisted men. The reasons were sickness in two cases, and indifference in most of the others.

Circumstances have combined to hinder Captain Merrill since he took command. The principal business of the place has been stopped, depriving the company of much of its material; the company was in bad shape when Captain Merrill took command, and although he has devoted much time and labor to overcome the difficulties, he has not been very successful. I did not recommend disbandment at the inspection, as the captain desired to make a final effort. The company cannot exist in its present condition. If a change is not very apparent when the company comes into camp, I would recommend disbandment.

Company E. The inspection and drill were gratifying not only, but the excellence of both was surprising, considering the age of the company. Very few errors were made. It is safe, and only justice to say that the company is one of the best.

Company F. Though the company has not yet reached the required standard of efficiency, a considerable degree of improvement was shown over the performance of last year. The per cent of attendance at weekly drills is lower than any company can stand and long survive. If this difficulty has become chronic, it is a pretty sure indication of dissolution. It remains to be seen if the trouble will be overcome.

Company G. The company paraded under command of First Lieutenant Freeto, who had been elected to suc-

ceed Captain Downs but had not received his commission. Lieutenant Freeto has done all the work since Captain Downs resigned, as the business of the second lieutenant does not allow him to attend to his company duties. Though the company was somewhat demoralized at the time of the inspection, it is probable that with a little time and the assistance of two lieutenants, Captain Freeto will succeed in bringing the company to something like its former self. New lockers have been provided, and it is the intention to soon move to more desirable quarters.

Company H. The inspection compared favorably with those of past years, which have usually been praiseworthy. As will be seen, the company is weak in guard duty, and the per cent of attendance at weekly drills too low. This is caused by conditions which other companies do not have to contend with. Many of the men work nights on alternate weeks, and so cannot attend every week. The sickness of the captain during the winter doubtless had an effect in reducing the per cent. For the past four months it has been more satisfactory. New quarters have been secured where the drill-room is smaller, but considering the conveniences of property and other rooms, the quarters are more desirable than the former ones, and state property is safe, which could not be said of it as formerly stored.

FIRST LIGHT BATTERY.

The inspection was fully equal to what we have come to expect here. The high standard is as high as it ever has been. The harness which was issued in 1867 is somewhat rotten, and will have to be replaced in part before long.

TROOP A.

This was a mounted inspection, and was very creditable, excepting some unsteadiness, and several failures to take the position of the soldier in "stand to horse." The space being limited and the new regulations having just been received, only a few movements were attempted. Seats were generally good and horses well handled, considering that about one quarter of the horses had never before drilled with the troop. Men are so widely scattered that most of the drills during the year have been in squads. Captain Davis has a squad at Peterborough, Lieutenant Dutton one at Bennington, and Corporal Stevens one at Jaffrey. The armory accommodations here are inadequate. The hall and property room are suitable, but better stable accommodations are greatly needed. The \$150 received from the State just pays for the armory; the stable costs \$100 extra. The expenses of horse hire to those who do not own their horses is a considerable sum in the aggregate. The harness is well cared for, but girths, cheekstraps, and throat-latches are somewhat rotten, and break frequently.

Summarily, the First Regiment has two weak companies; the Third, four. There is prospect of improvement in Companies C of the First, and H and perhaps F of the Third. This leaves three companies, A and D of the Third, and F of the First, in precarious circumstances.

The following are among the most common errors noted: Failure to keep wrist straight in dressing; tendency to dress without command, when forming line to right or left from column of fours; neglect of second sergeant to align rear rank opening ranks; chambers

not closed with thumb; left arm not against body in firing; rear rank omitted to close at preparatory command for firing; omission of "Fire by Company" in volley firing; file closers did not charge bayonets; too much haste in commands for firings; side-step too fast.

The most common faults in records were as follows: Minors' permits missing; list of members not sent to selectmen; no excuses for absentees; names of absent enlisted men not copied on second page of morning report.

Most companies had devoted the time mainly to the work in close order. Excepting in Companies G and H of the Second Regiment, practically nothing had been done in extended order. Par. 503 of the Regulations was referred to, and extended order work advised at once in every company.

Progress has been made in rifle practice, as will be seen by reference to the increasing list of qualifications. A few companies are not doing much, and many do not take up the preliminary and supplementary armory practice, which is decidedly necessary to best results. It is to be hoped that the "struggle for a record" will not lead to neglect of this important part of the work. In the majority of companies a good deal of time is spent at the range. It must be to qualify forty per cent as sharpshooters, as has been done in the two Keene companies; and Company C, of Concord, has done almost as well. It was the intention to rate companies in rifle practice by a new system this year, we have so far outgrown the old; but as the new method has not yet been announced, companies will be rated as formerly. I will here give the new method as submitted in a letter just received from the Inspector of Rifle Practice. "Ten credits will be allowed for highest

excellence. Each company qualifying or re-qualifying during the season seven sharpshooters will receive five credits; four sharpshooters, four credits; one sharpshooter, three credits; five first-class marksmen, two credits; five third-class marksmen, one credit. In addition to this, companies, having in regular practice over eighty per cent of the members, will receive five credits; from seventy to eighty per cent, four credits; from sixty to seventy per cent, three credits; from fifty to sixty per cent, two credits; from forty to fifty per cent, one credit. No man to be considered in regular practice who has not had practice on the range at least three times during the season."

It is customary in some companies to enlist minors, and secure the permits, if possible, afterwards. It is much easier to secure the permit first, and this conforms to the law. One company had nineteen minors without a permit. In all probability this company could not be rallied for disagreeable duty, for the minors could not legally be held.

Probably not so much time has been given to guard duty this year on account of the press of other work; two or three companies have entirely neglected it. No man is a good soldier who cannot be depended upon as a sentinel, no matter what are his other qualifications.

With few exceptions, I questioned every man in every company upon guard duty, and the credits are given according to the answers received. Every man whose knowledge was better than poor was credited, and the proportion of credits is to ten, as the proportion of excellence is to the number in the company.

As proposed in my last report, the per cent of attendance at weekly drill has not been approximated, but has been reckoned from the first sergeant's roll-book,

where no roll has been kept, or in the few cases where it was not produced, companies have been credited with fifty per cent. This may be too high in some cases, perhaps too low in some, but rather than call it nothing, as perhaps it should be done, I have allowed this per cent.

The first sergeant's roll-book is part of the company record (G. O., No. 7, 1887, Gen. Hdq'rs.), and is one of the most important, for it is a pretty sure indication of the amount of work that is being done (if it does not indicate the quality of it) and the interest that is shown.

The best form of a roll-book I have seen is such as is used by Company I, Second Regiment. There is a sheet for each month, about four inches wide, and twelve inches long, lined for five drills. This may be inserted between two covers, and held in place by an elastic band at the middle. As the covers open at the end, the whole sheet, with the names of the entire company is seen at a glance, without turning several leaves, as is necessary with most books. The sheet can be slipped out and certified, and filed, if desired, at the end of the month.

The more I see of the National Guard, and the better I know it, the better satisfied I am that the best companies are to be expected in the cities. Not because the city has the best material, but because the best conditions are there: men are not so widely scattered; it is easier to secure men of the same caste (an important matter if social means are to be used to interest the men in connection with the regular work). When more than one company is located in a place they are naturally helpful, whether the rivalry is friendly or unfriendly: and usually the city

offers the best armory accommodations. This will not apply to Manchester, however, or Dover, or Rochester. Rochester has probably as poor accommodations as any company in the force, excepting Company C, First Regiment which has not possessed an armory since its organization. The Dover companies deserve a better drill-room than the one they now have.

The armory question is a vital question in Manchester, and the character of the companies, if not the very existence of some of them, will depend upon the settlement of it before long. The present time seems opportune. I understand one of the corporations has made a generous offer, and that several citizens have promised liberal contributions. Several valuable and central lots, in every way desirable, may be had for less than they would be sold to individuals, or for any other purpose.

If a sufficient number of men with interest in the cause cannot be found to erect the building, men can be found to interest themselves if the project is found to offer a good investment. The armory at Nashua, costing approximately \$30,000, pays from four to four and a half per cent on the investment. The one at Keene, rents annually for social purposes and other than military, for almost ten per cent on the money invested: this is exclusive of the rent paid by the companies.

Another company would be supported in Manchester if a general armory was built, and the six companies paying \$400 a year (which is what is paid by the Nashua companies), with the rent paid by the battery, headquarters, and band, would amount to \$3,000 per year, besides the rent received for other purposes.

If a united effort could be made by all the companies and interested citizens in Manchester, it seems as if an

armory might now be had, suited to the needs of the companies, and of which Manchester might be proud.

State property is well cared for; most of the injuries were due to carelessness which might be called excusable. I found only one instance of an inexcusable nature.

RECOMMENDATIONS.

That the Signal Detachment be increased to eight men, and a non-commissioned officer.

That all state property be at the armory at the time of the annual armory inspection.

That more care be used in selecting non-commissioned officers. No man should be given the chevrons who has not in him the making of an officer.

That in connection with the work on the range, officers and non-commissioned officers accustom themselves to estimate distances. As the distance of the objective is now named in all the firings, it is important that officers and non-commissioned officers should perfect themselves in range finding; for the efficacy of the fire will depend in great measure on the ability in this direction.

That rifle practice and simulated guard instruction be taken up in the armory by every company.

No accurate comparative statement can be made this year as to the progress of companies, on account of the change of methods, but it is safe to say that progress has been made in Companies D and K of the First Regiment, D of the Second, and C, E, and F of the Third.

Most companies are doing hard work; the changes have made it necessary, and a great deal of extra time has been given in many of the companies.

You will find in the company inspection books, which I forward herewith, a more minute report of each com-

pany, and a list of points criticised and commended in each company's drill, under each officer.

Appended is the usual tabulated report.

I wish to express my feeling of indebtedness to all officers for courtesies received during this tour of duty, and also to express my appreciation.

I am, sir,

Your obedient servant,

ALBERT N. DOW,

Inspector-General.

TABULATED REPORT OF INSPECTIONS AND

		Present and Absent.		Present at Inspect'n		Absent from Inspect'n		Percentage of Attendance.			
		Officers.	Men.	Officers.	Men.	Officers.	Men.	Inspect'n.	Encampment, 1891.	Weekly drills.	Records.
BRIGADE.											
Field and staff.....	Concord.....	10	4	10	4	.....	.....	100	97	.....	ex....
FIRST REGIMENT.											
Field, staff, and } non-com. staff..... }	Manchester.....	6	4	5	3	1	1	80	100	.....	ex....
Band.....	Manchester.....	.....	24	.....	24	.....	.....	100	100	.....	.....
Company A.....	Dover.....	3	34	3	33	.....	1	97	83	50	good..
" B.....	Manchester.....	3	37	3	37	.....	.....	100	89	74	ex....
" C.....	Manchester.....	3	36	3	36	.....	.....	100	79	54	good..
" D.....	Dover.....	3	45	3	43	.....	2	96	92	80	ex....
" E.....	Manchester.....	2	35	2	31	.....	4	89	95	50	fair..
" F.....	Derry Depot.....	1	41	1	36	.....	5	88	80	50	poor..
" H.....	Manchester.....	3	40	3	39	.....	1	97	100	50	good..
" K.....	Manchester.....	3	38	3	38	.....	.....	100	97	70	ex....
Totals (Regt'l)....		27	334	26	320	1	14				
SECOND REGIMENT.											
Field, staff, and } non-com. staff..... }	Keene.....	8	4	8	4	.....	.....	100	100	.....	ex....
Band.....	Nashua.....	.....	23	.....	23	.....	.....	100	100	.....	.....
Company C.....	Nashua.....	3	36	3	36	.....	.....	100	78	65	good..
" D.....	Milford.....	3	38	3	38	.....	.....	100	74	53	good..
" E.....	Rochester.....	3	38	3	32	.....	6	85	85	50	poor..
" F.....	Farmington.....	3	28	3	27	.....	1	96	87	50	good..
" G.....	Keene.....	3	38	3	38	.....	.....	100	89	90	ex....
" H.....	Keene.....	3	36	3	36	.....	.....	100	89	96	ex....
" I.....	Nashua.....	2	40	2	37	.....	3	92	82	68	good..
" K.....	Nashua.....	3	39	3	36	.....	3	93	82	49	fair..
Totals (Regt'l)....		31	320	31	307	.....	13				
THIRD REGIMENT.											
Field, staff, and } non-com. staff..... }	Concord.....	9	5	3	3	6	2	42	100	.....	ex....
Band.....	Concord.....	.....	24	.....	24	.....	.....	100	100	.....	.....
Company A.....	New London.....	3	39	2	28	1	11	74	63	33	good..
" C.....	Concord.....	3	39	3	32	.....	7	83	80	67	good..
" D.....	Pittsfield.....	3	31	2	17	1	14	56	55	50	ex....
" E.....	Concord.....	3	35	3	31	.....	4	89	65	60	ex....
" F.....	Bristol.....	3	36	3	29	.....	7	82	68	18	ex....
" G.....	Lebanon.....	2	39	2	30	.....	9	78	76	50	good..
" H.....	Franklin Falls...	3	40	3	35	.....	5	88	70	35	good..
Totals (Regt'l)....		29	288	21	229	8	50				
BATTERY.....	Manchester.....	4	67	4	60	.....	7	91	90	52	ex....
CAVALRY.....	Peterborough....	3	56	3	52	.....	4	93	100	90	ex....
Brigade totals....		104	1,069	95	972	9	97				

COMPARATIVE STANDING OF ORGANIZATIONS.

Rifle practice.	Uniforms.	Arms.	Equipments.	Military bearing.	Guard duty.	KNOWLEDGE OF DUTIES.								Credits.	
						INSPECTION.		DRILL.							
						Officers.	Men.	Captain.	Card.	First Lieut.	Card.	Second Lieut.	Card.		Men.
.....	ex	ex	ex	ex	.....	ex	ex								47
.....	ex	ex	ex	ex	.....	ex	ex								46
good..	ex	ex	ex	ex	3	ex	ex	good..	2	ex	1	ex	3	good..	36
ex	ex	ex	ex	ex	5	ex	good..	ex	5	ex	4	ex	2	ex	69
fair..	ex	ex	ex	ex	6	good..	ex	fair..	4	fair	3	fair	2	poor..	77
good..	ex	good..	ex	ex	4	good..	good..	ex	5	ex	3	fair	4	good..	63
poor..	ex	ex	ex	ex	4	good..	ex	good..	4	good..	3	.....	1	good..	71
ex	ex	ex	ex	good..	3	ex	good..	fair..	.....	.....	.....	.....	1	good..	61
good..	ex	ex	ex	ex	3	good..	good..	ex	3	ex	2	ex	1	ex	52
ex	ex	ex	ex	ex	4	ex	ex	ex	4	ex	2	ex	1	ex	71
good..	ex	ex	ex	ex	4	ex	ex	ex	.....	.....	.....	.....	1	ex	77
Co.av.														67½	
.....	ex	ex	ex	ex	.....	ex	ex								48
.....	ex	ex	ex	ex	.....	ex	ex								36
good..	ex	ex	ex	ex	6	ex	ex	ex	3	good..	4	good..	2	ex	73
fair..	ex	ex	ex	good..	3	ex	ex	ex	5	good..	3	ex	4	good..	67
good..	ex	good..	ex	ex	1	good..	good..	ex	3	good..	5	good..	2	good..	60
good..	ex	ex	ex	good..	5	good..	good..	ex	1	fair	4	good..	5	good..	66
ex	ex	ex	ex	ex	7	ex	ex	ex	5	ex	3	ex	2	ex	82
ex	good..	ex	ex	ex	7	ex	ex	ex	4	ex	1	good..	2	ex	80
good..	ex	ex	ex	ex	6	ex	ex	.....	.....	.....	5	good..	4	ex	70
good..	ex	ex	ex	ex	3	ex	ex	ex	3	ex	1	ex	2	ex	69
Co.av.														70½	
.....	ex	ex	ex	ex	.....	ex	ex								42
.....	ex	ex	ex	ex	.....	ex	ex								36
poor..	ex	ex	ex	good..	4	ex	good..	good..	4	.....	1	fair	1	fair	53
good..	ex	ex	ex	ex	2	ex	ex	ex	1	ex	2	ex	5	ex	70
poor..	ex	ex	ex	good..	4	ex	good..	good..	3	fair	5	.....	1	good..	54
good..	ex	ex	ex	ex	7	ex	ex	ex	3	ex	4	ex	2	ex	74
poor..	ex	ex	ex	good..	1	ex	good..	fair..	4	good..	5	fair	2	fair	52
good..	ex	ex	ex	good..	2	ex	good..	.....	.....	good..	4	fair	1	good..	57
poor..	ex	ex	ex	ex	2	ex	ex	ex	1	good..	2	ex	3	good..	62
Co.av.														60½	
fair..	ex	ex	ex	ex	5	ex	ex	ex	.....	ex	.....	ex	.....	ex	78
.....	ex	ex	ex	ex	1	ex	good..	ex	.....	ex	.....	ex	.....	good..	71

STATE OF NEW HAMPSHIRE,
INSPECTOR-GENERAL'S OFFICE,
EXETER, August 1, 1892.

GEN. A. D. AYLING,

Adjutant-General, Concord, N. H.:

SIR, — In accordance with the requirements of par. iv, G. O. No. 5, A. G. O., dated April 21, 1892, I have the honor to make the following report of the encampment of the N. H. N. G. from June 24 to 30, inclusive.

We were very fortunate to have with us this year Capt. E. S. Godfrey, Seventh Cavalry, U. S. A., who was detailed by the War Department, to be present at this encampment.

As he was a member of the board which prepared the new drill regulations, he was able to answer satisfactorily the questions with which he was inundated. His services were invaluable at this time. He was constantly occupied, criticising, suggesting, and commending, as occasion required, and I believe his services were appreciated by every officer and man.

The tents were this year again pitched by laborers. The commands were quartered as last year: First, Third, Second, Artillery and Cavalry. The Third Regiment was first to arrive, at noon, the Artillery last, at five minutes past one. Both Artillery and Cavalry marched over the road. It began to rain soon after the arrival of the Artillery, and the regular routine was not begun until 3 o'clock, when the first call was sounded for guard-mounting. Drill call was sounded at 3.45. The Third Regiment responded, and had company drills; the other commands spent the time in arranging quarters, straightening tents, and getting settled. The weather was threatening nearly every day, and consider-

able rain fell, but the regular routine was not interfered with, except on Monday, when rain stopped the work at 3 o'clock. On every other day, except Sunday, every moment was occupied. Sunday, inspections were ordered by battalions, or regiments, at the option of commanding officers. The Third appeared at 9.15 and held its inspection on the regimental parade; the other commands had inspections in company streets. Several squads in command of officers went to Concord, to attend religious services. Services were held at Brigade Headquarters at 3 o'clock, at which the whole Brigade was present. There was a review at 4.30, after which regimental parades were held in each regiment. All drills were omitted. The day was unusually quiet even for a Sunday.

His Excellency Governor Tuttle, and his staff arrived at noon Monday. Governor Tuttle remained until Wednesday, his staff were present nearly all the week. Most of the work at first was in close order. The Third Regiment taking up regimental drill, the First and Second drilling mostly by battalions. The extended order was hardly touched until Wednesday, when it was taken up in all the commands, by squads, platoons, and companies. It is probable it was not taken up earlier, because it was desired to make as good an appearance in close order as possible, at review, which came Tuesday afternoon; and a good appearance certainly was made. It was expected that alignments would not be so good as formerly, with the absence of the touch of elbows, but they appeared as good as ever, and the passage in review was equal to any I have seen here. The customary criticisms might be made, which have to be made at every review, i. e.: some officers saluted too soon; some did not turn the head; a few of the non-

commissioned staff officers saluted as officers ; and distances might have been better in several cases.

The head is turned when the sword is brought down, not before it is brought to the first motion of present. Non-commissioned staff officers turn the head as well as officers. Not all the drum majors conform to the regulations in regard to the use of the baton.

The field officers, and most of the captains were familiar with the movements of the battalion, and the regiment in close order. It was not very uncommon to hear the preparatory command of a field officer, without hearing the cautionary command for the first company to begin the movement. Captains were not always careful to face their companies in the turns so that the pivots often took the full step, before all the men had reached the line ; this caused undue haste in order to catch up. Commands for dressing might often have been omitted ; and after dressing, the command front, given as soon as practical, without waiting for all the men to get the alignment, would have saved time, and the object would have been accomplished. I am convinced that it would be profitable for regimental, and battalion commanders to go out to drill with a plan of work, or some definite idea of what they intend to do. Too much time is used in marching in column of fours, simply covering ground. It is doubtful if it is economy of time, or economy of men, to keep two or three hundred men waiting, in order to discuss the regulations, which can better be done after drill hours at quarters.

Guard-mounting was taken up by regiments, as prescribed, and after the march in review, the details were consolidated. A Field Officer of the Day was detailed ; each regiment also had an Officer of the Day.

The guard-mounts of the first few days were neces-

sarily imperfect, but there was a decided improvement from day to day, and towards the end of the week there was little to criticise. The ceremony was less awkward after the first day, as all the regimental details came out at the same time, instead of successively, as on the first day.

Calls were generally well and promptly repeated, after the first day, by drummers at the guard-house, in the First and Third Regiments, and trumpeters in the Second Regiment, Battery, and Cavalry. The order of last year relating to looping tents, caring for bedding before guard-mounting, and fastening down, before retreat, was referred to this year as being in force. On the second day tents were not generally looped, except in the First Regiment. Tuesday all were looped, except in Companies A, G, and H, of the Third. Afterwards the order was very generally obeyed.

Policing was done as it was last year. Regimental commanders were held responsible for the appearance within the limits of their own commands. No peddlers were allowed inside the grounds, so that police duty was somewhat lighter than usual. The only criticism that should be made is concerning pieces of paper which evidently blew from tents after police duty had been performed. Policing should have extended to the inside of tents, and no loose paper left to blow about.

Several inspections were made of the sanitary arrangements. Debris was found one day in rear of the cook-houses, which the teams had not seen and had left. The sinks are in bad condition and new ones should be built before next year. The wooden framework is rickety, and too weak in many places to be safe. Some of the ditches are nearly level with the ground.

Although the weather was damp most of the time,

there was very little sickness. The few cases reported were caused by dietary troubles, and were not at all serious. Two men were slightly injured about the hands, so that they were unable to carry a gun. Inspections were made hurriedly, as camp inspections have now come to be made, coming so soon after the annual armory inspections. Trumpeters should have sounded the flourish at the inspections of the Battery and Cavalry. No ruffle was sounded in the First or Second Regiments. The ruffle in the Third was given when the regiment was turned over to the Colonel. If the inspection is not preceded by review, ranks are opened and the inspector is received with a present, before forming column of companies.

In the First Regiment, Company D had one rusty piece, Company E one rusty piece, Company K some dirt and oil and several tarnished belt-plates. In the Second Regiment, Company K one rusty piece, Company I a little rust, Company E superfluous oil, Company D one pair of unblackened boots, Company G superfluous oil. One member of the band wore citizen's trousers. The Third had evidently carefully prepared for the inspection. Arms and equipments were in excellent condition. The quarters were orderly, and methodically arranged. By request, Captain Godfrey inspected the Cavalry and he found nothing to criticise except the failure of the trumpeters to draw swords.

The Battery presented its usual appearance. Pieces were immaculate, as were equipments. The steadiness of the men could hardly have been better.

The brigade dress parades were greatly missed, but the regimental parades towards the end of the week were very impressive and a great improvement over the first, thanks to the suggestions of Captain Godfrey.

Parades were had in the three regiments, successively, each day. The appearance of sentinels this year was not so good as I have seen it, doubtless due to the extra work which all companies have had to do in other directions this spring. On several occasions the call for relief could not be passed to the guard-house after repeated trials. I believe it would be profitable to detail an officer to assist Corporals and Sergeants of the guard in the work of instruction, as has been done with profit. I cannot but believe that the system of crediting companies for knowledge of guard duty will result in producing better sentinels; but so long as the greenest men are detailed, the appearance of sentinels at camp will not be a criterion of what we know about guard duty.

It seemed to me that military courtesy was this year better observed than I have ever known it. Failures to show proper respect to officers were seldom seen.

On Thursday a practice drill was had outside the grounds, beginning in the woods a mile south of camp. Considering that few companies had done anything in extended order previous to the day before, not very much could be expected in illustrating the principles of extended order drill. Squad leaders did not have the perfect control of their men which they are supposed to have, and which is the foundation of the whole system. Some of the rushes were made over too great distances, so that the men were out of breath and unable to hold a steady piece when they began to fire. A large number of men in several companies, fired into the air at angles varying from thirty to sixty degrees. In spite of the mistakes that were made, the practice was beneficial. It showed how necessary it is to be able to control the men. The work was more practical on account of the varied accidents of the ground, which

are not presented inside of the camp-ground. After the lessons there learned, the exercises in squad leading ought to be taken up in earnest and the remarks on fire discipline more fully appreciated. We shall doubtless be better prepared for such work next year, when we shall have become familiar with the extended order work. It appears from the reports from other States, that many of them take up this work outside of the camp-ground regularly, and with profit.

In accordance with instructions from Surgeon-General Stillings, four men were detailed from the First Regiment, and two each from the Second and Third, to act as a Hospital Corps, under the command of Harry P. Bennett, Company E, Third Regiment. Fortunately there was no work for them to do. If there is ever need of a Hospital Corps it will be a real need, and it is to be hoped that this is but the beginning of such a corps as the State should possess.

The Signal Detachment was actively employed, day and night, with flag and torch. They have never been given any important work to do, but if we may judge from the work done in practice, they may be depended upon when their services are required.

Discipline was somewhat relaxed on the last night. Taps were not generally observed, especially in the Second Regiment, where quiet did not prevail until a late hour. Cannon crackers and blank ammunition were freely expended. If discipline is desirable, there seems to be no reason why it should not be enforced on the last night as well as on any other night.

Tents were not struck on the last day on account of dampness, and a detail from Company E, Third Regiment was left in camp to care for them when dry.

I did not issue drill cards to be used at this encamp-

ment, because the time was so short between the adoption of the regulations and the time set for the encampment, that I judged the work would be necessarily too elementary.

It is necessary again to speak of the need of using more care in adjusting guy ropes. Between fifty and sixty tents were found strained or torn by shrinking guys.

We have always been cramped for lack of drill room, and this year with the extra space required, by reason of the increase of intervals, the drill ground was found too small for satisfactory work when all the organizations were on the field at once.

More ground could probably be obtained at no great expense, and the benefit would be out of all proportion to the probable cost.

TABLE OF STRENGTH AND ATTENDANCE.

ORGANIZATION.	Present and absent.			Largest number absent any day.		Smallest number absent any day.		Average number absent per day.		Per cent of attendance.		
	Officers.	Men.	Aggregate.	Officers.	Men.	Officers.	Men.	Officers.	Men.	Per cent of attendance, 1891.	Per cent of attendance, 1890.	Per cent of attendance, 1890.
Brigade staff and N. C. staff	10	5	15	1	.....	.....	.....	$\frac{3}{7}$	.....	97	97	97
First Regiment...	32	362	394	5	54	1	33	$2\frac{1}{7}$	$43\frac{1}{7}$	88	92	86
Second Regiment.	32	334	366	2	104	.....	63	$\frac{12}{7}$	$77\frac{1}{7}$	78	82	68
Third Regiment...	30	298	328	2	78	1	66	$1\frac{6}{7}$	$74\frac{1}{7}$	76	71	78
First Battery.....	4	68	72	.....	2	.....	1	.....	$1\frac{3}{7}$	98	90	96
Co. A, Cavalry	3	55	58	1	1	.....	.....	$\frac{1}{7}$	$\frac{1}{7}$	99	100	100
	101	1,117	1,233									

The organizations continue to maintain the same relative percentage of attendance. The percentage of the First Regiment was again the highest, although not quite up to that of last year. The Brigade percentage was .83 ; a little higher than last year, and I believe than any previous year. Company G of the First Regiment had the best percentage of attendance of any of the infantry companies, having a total of seven absentees for the seven days. Company C of the Third had thirty-three, the smallest number of any company in the regiment. Company H of the Second had thirty-nine.

The largest number of absentees was in Company G of the Third, which had a hundred and thirty-four for the seven days, Company I of the Second had one hundred and seven, and Company A of the First had seventy-two.

The encampment this year was necessarily a working one. No time has been wasted at any encampment, but this year men seemed to realize that time was precious, and that there was more work than usual to do. The work was interesting, because it was new. Schools were organized in each of the three infantry organizations, where much valuable work was done.

The commander of the Third Regiment was indefatigable, and seemed to regret that it was necessary to devote a few hours of the twenty-four to sleep.

The New Hampshire National Guard of to-day would not be recognized by a Rip Van Winkle member of a company of ten years ago. It is not the same organization ; we have a more intelligent body of officers, the standards are higher, discipline is stricter, and the *esprit du corps* is altogether better. We still have weak companies, but they do not approach the "slam-bang" type. The force deserves more assistance from the State than

it receives. Those of a contrary opinion, or who are in doubt, are those who are not acquainted with the force, and do not know what it is doing.

The Brigade is now well uniformed, equipped, and armed. It is officered by intelligent men of good character. The men are under good discipline, and, thanks to the Department of Rifle Practice, the majority of the men are accurate shots. There is no doubt in the minds of those acquainted with the present condition, that when the Brigade, or any part of it, is called out it may be depended upon to do all that reason should expect.

I am personally indebted to General Patterson and every member of the brigade staff for courtesies, which lightened the burden of work and made my tour of duty a pleasant one.

Very respectfully your obedient servant,

ALBERT N. DOW,

Inspector-General.

REPORT OF CAPT. E. S. GODFREY, SEVENTH CAV-
ALRY, U. S. A.

1,202 PENNSYLVANIA AVENUE, N. W.,
WASHINGTON, D. C., August 5, 1892.

ADJUTANT-GENERAL, U. S. ARMY,
Washington, D. C.:

SIR, — In compliance with letter of instructions from your office Military Information Division, dated June 10, 1892, I have the honor to report that pursuant to S. O. No. 136, par. 6, Headquarters of the Army, A. G. O., June 10, 1892, I proceeded to Concord, N. H., for the duties required of me. I had previously reported by letter to the Governor, and in reply had received the following letter of instructions:

THE STATE OF NEW HAMPSHIRE,
ADJUTANT-GENERAL'S OFFICE,
CONCORD, June 7, 1892.

CAPT. E. S. GODFREY,
Seventh Cavalry, U. S. A.,
Washington, D. C.:

SIR, — By direction of the Governor I have the honor to acknowledge receipt of your letter to him dated June 13, and in reply to say, he has no special instructions to give, regarding your tour of duty with the First Brigade, New Hampshire National Guard, but he will be glad to have you make any suggestions which may

occur to you, during your visit, for improvement of the drill, discipline, or general efficiency of the troops.

Very respectfully,

(Signed) A. D. AYLING,

*Adjutant-General,
State of New Hampshire.*

Upon arrival, I reported in person, but received no further instructions.

The brigade commander, Brig. Gen. Joab N. Patterson, and brigade staff, went into camp on the 24th; the troops arrived on the 25th.

I went to the railroad station to observe the debarking and formation of the troops as they arrived. The companies were formed promptly, and generally correctly; some however were formed in single rank. As a rule captains had to leave their organizations to look up staff or field officers to learn of places of formation. They should have been notified by battalion commanders or staff officers, upon arrival, of the place of formation. Then after the captains had formed on the regimental lines, they were kept in ranks, at the order, or allowed to fall out with arms in their hands while waiting for the arrival of trains with other companies. Arms should have been stacked before allowing them to *fall out*.

There is nothing so wearisome to men in ranks as long, indefinite waiting, in the expectancy of a move at any moment. This is a matter of moment that is too often lost sight of in the care of men. This observation applies to drills as well.

The regiments were marched separately to the camp-ground. They marched with a free, easy step, and made a good impression.

The State camp-ground is about one mile from Con-

cord, N. H., across the Merrimack river, has thirty-nine acres inclosed by a wooden fence. The soil is light and porous and dries off quickly, even after the heaviest rains. The ground inclosed is sufficient for the ceremonies, and the close order drills of the infantry of the Brigade, but the troop and battery should drill at other hours than the infantry, as the captains must give too much attention to avoiding collisions.

The National Guard of New Hampshire consists of the First Brigade of First, Second, and Third Regiments of Infantry, one battery of Light Artillery, one troop of Cavalry, and Signal Detachment.

STRENGTH OF BRIGADE.

	PRESENT.		ABSENT.		PRESENT AND ABSENT.	
	C. O.	E. M.	C. O.	E. M.	Aggregate.	Horses
General and Staff.....	10	5	.....	.....	15	15
First Regiment	31	320	1	42	394	9
Second Regiment.....	32	270	.....	64	366	11
Third Regiment	28	220	2	78	328	11
Troop A, Cavalry	3	55	.....	.....	58	58
First Light Battery.....	4	67	.....	1	72	46
Totals.....	108	937	3	185	1,233	150

Each regiment was organized into two battalions, each Lieutenant-Colonel and each Major was permanently assigned to the command of a battalion of his own regiment. It was the first time the regiments had been so divided and that these field officers had such commands devolving on them.

The duties of the junior field officers are, as battalion commanders, under the new Drill Regulations, of greater importance than formerly, and the short time

the encampment lasts makes it necessary that they be more constantly with their battalions. The companies composing the battalions are usually at widely separated localities, and the State encampment gives about the only opportunity they have of becoming identified with their battalions. For these reasons I think it detrimental to detail them as field officers of the day.

The National Guard of New Hampshire wear the uniform of the United States Army — full dress, fatigue, and overcoats. These have been in use for several years, are serviceable, but the overcoats are of the old pattern. They also have the regulation white helmet.

The infantry are armed with the Springfield rifle, calibre 45, and triangular bayonet. They are equipped with the black leather belt, cartridge box (obsolete pattern), and the box knapsack (obsolete pattern).

All organizations have their meals furnished by caterers. Most organizations, including the Light Battery and Cavalry troop, own their mess tent and mess outfit, and the members of the organization pay their per capita shares into the company fund, from which all expenses are paid.

The discipline of the Brigade was good. Military courtesies were extended as a conscientious duty. Some of the amusements were rather boisterous, and when accompanied by the drums were out of place. There was but little drunkenness, none that I saw.

Four hours and fifteen minutes daily were prescribed for drills. Except the fifteen minutes immediately after reveille devoted to "setting-up" drill, no programme was prescribed by the brigade commander. The drills were held from 9.30 to 11.30 A. M., and from 2 to 4 P. M. Considering the short duration of the camp, the number of hours is not excessive. Experience has shown that the

same number of hours divided into shorter periods accomplish better results.

The fifteen minutes given to "setting-up" drill is very good, as far as it goes, but the "setting-up" comes from the persistent application of its principles, in ranks and out of ranks. Too much time at the drills was given to explanations, long drawn out, of the foundation principles — all those should have been given thorough attention in the squad drills. Better results are accomplished when a regular programme is laid down for certain movements to be executed during the drill hour. This programme should be prescribed a sufficient length of time before the drill for preparatory study.

But little attention had been given to the extended order drill before coming into camp. The provisions of par. 503, Infantry Drill Regulations had been overlooked or disregarded.

During the forenoon drills in the early part of the encampment considerable attention was devoted to the extended order drill, particularly was this the case in the First Regiment, Colonel Lane. This officer appreciated its importance, and subordinate officers responded with hearty coöperation.

It frequently happened that officers and non-commissioned officers failed to catch the *spirit* of the extended order drill and had movements executed in a rather perfunctory manner. Although there had not been any extended order drill by battalions, the First and Third Regiments of Infantry, a platoon of cavalry and platoon of artillery were designed as a hostile force to approach the camp, and organized under the command of Colonel Lane, First Regiment. The Second Regiment of Infantry, a platoon of cavalry and platoon of artillery, under Colonel Metcalf, Second Regiment, were

designated to defend the camp. The troops for the offence were sent out sometime previously to allow them to get into position. The defence was then sent out to meet this force. Although there was ample space to permit the troops to be posted according to the necessities of modern conditions of war, yet it was observed that the supports and reserves were held at very short distances from the fighting line, and followed it when in open country at about the same distances. The commanding officer on each side showed considerable skill in maneuvering his firing lines, yet the conditions of modern war were disregarded by the subordinate commanders, and after observing the proprieties of drill for awhile, the officers on the offensive lost all control of their men, and in the face of volley firing that would have annihilated them in a short time, advanced in great disorder to within bayonet distance of their opponents. Notice is made of this *battle exercise* that the attention of the officers and men may be specially directed to the absolute necessity of discipline in battle.

Daily, each regiment had Regimental Parade, and toward the close of the camp they executed the ceremony in a very creditable manner.

I did not make any formal inspection of the Infantry, the instructions not contemplating any inspections unless requested. At the request of Brig. Gen. A. N. Dow, Inspector-General, N. H. N. G., I inspected the Light Battery and Troop A, Cavalry.

The Light Battery is a twelve-pounder or Napoleon four-gun battery, and is commanded by Captain Piper. The ceremonial part was executed correctly. The dress and appearance of the men were good, except the setting up. The equipment appeared to be in good order. The harness is old, and would not do for active

service. The horses are hired for the encampment, being draft horses secured in the locality of the Battery. Their drill was good, that is in the sense of being accurate, but nearly all movements were executed at a walk, as the horses were too green to be handled at the rapid gaits. The new Artillery Drill Regulations had been received after arrival in camp.

At the inspection, Troop A, Cavalry presented a creditable appearance and did well. The arms, horses, equipments, and clothing were in good order. The troop is armed with the saber only. To make them efficient for any service, except ceremonial, or become efficient in the Cavalry Drill Regulations, it is necessary that they should have carbines. This armament is necessary for instruction in the extended order drill, and the troop has had no instruction in that drill. They have had little or no target practice.

The close order movements in the school of the troop were well executed, better than I had expected.

They have had no individual instruction, nor have their horses had individual training. It is not necessary that the troop should be assembled for the greater part of that training, as the exercises and training of trooper and horse, in the Drill Regulations, may be had by the individual or when two or three are gathered together.

In case the troop should be called into active service, it could be assembled for field service in about twelve hours.

The men were intelligent, attentive, and quickly caught on to explanations and showed a commendable eagerness to learn. They all seemed proud of their organization, and justly so. Membership is so highly prized, that usually there are several on probation, and

they had the pick of the community, and there were comparatively few changes in its personnel. For a number of years it has gone into camp with its maximum strength. The members are nearly all farmers, consequently the troop is not localized so that it can be readily assembled for drills and other instruction. A majority rode their own horses; the others are so situated that they can control the use of the horses ridden by them. As would be expected their discipline was excellent.

During the week of the encampment there was one practice brigade review, and one brigade review by Governor Tuttle. The formations and review were executed in a very creditable manner. Each regiment had a regimental parade daily. In the fore part of the encampment, the parades were not well executed, and showed a lack of preparation on the part of both field and company officers, and were conducted much as prescribed in Upton's Tactics. The subsequent parades showed great improvement, but up to the last parade one or two battalion commanders showed that they had failed to grasp their responsibilities.

Each regiment had guard-mounting on its parade. The guard thus mounted was reviewed by the regimental officer of the day, who had one or two posts under his charge. The camp guard was formed, inspected, and reviewed with the regimental guard; the details from each regiment, thus mounted, were then consolidated in the general parade, turned over to the brigade officer of the day, who was a field officer.

The conduct and bearing of the members of the guard were soldierly, but as a rule they were not conversant with their duties. The officers and non-commissioned officers of the guard were largely responsible

for this deficiency, but not entirely; they had been instructed in many of the details in their armories, but it was not to be expected that they would be conversant with their orders without constant reiteration.

From the report of Major Wellman, the Inspector of Rifle Practice, I conclude that only ten companies and the Light Battery have armory rifle practice, and that no very great interest is manifested; but also, that the interest increases as the facilities for range and armory practice increase.

The report for the year 1891 shows seventy-six sharpshooters, a gain of thirty over 1890; marksmen, thirteen, a gain of seven; first-class, eighteen, a gain of eight; second-class, thirty-seven, a gain of seventeen; third-class, one hundred and five, a gain of fifty-three.

These numbers are useless for comparison, except to show the increasing interest in target practice, as the classifications are not based on Blunt. There were 55,562 ball cartridges expended. The State has 79,000 ball cartridges on hand. Reloading is practiced by nearly all the companies.

The State has haversacks and canteens for 300 men, but has no camp utensils for the field.

Of course there will be a difference of opinion as to the relative value of brigade and regimental camps. In the short time allotted for the encampment once a year, I believe that better results will be obtained by having the troops at the State camp by regiment for at least one year. It would certainly be more satisfactory to the visiting officer, giving him more opportunities to devote attention to the internal affairs of the organizations. The main object of the encampment, as I understand it, is to bring about uniformity. Professional soldiers recognize the inadequacy of the time to accomplish it.

With many organizations on the drill ground at the same time, and each commander working on a plan of his own, it is impossible to follow up all of them. During the squad and company drills, the field officers were constantly giving their oversight, and the great improvements toward uniformity were largely due to them.

The officers, as a body, showed great interest and intelligent zeal in their work, and the result of observation during the encampment confirmed the favorable opinions reported by me on the officers' school, in March, 1892. Considering that the National Guard of New Hampshire are only paid when turned out for the encampment and the inspection by the Inspector-General, that their organizations are kept up through personal zeal, that the Drill Regulations had been in their hands but a short time, that they have but a few armories which are adequate to their purposes, and that the battalions have only recently been organized, I think the results showed much conscientious labor.

To Governor Tuttle and his staff, and to the officers and men of the First Brigade New Hampshire National Guard, I am grateful for their flattering cordiality. To Adjutant-General Ayling, Brigadier-General Patterson, Inspector-General Dow, Captain Gienty, A. D. C., and Captain Davis, Troop A, I am under obligations for special courtesies to assist me in my duties.

Very respectfully,

E. S. GODFREY,
Captain, Seventh Cavalry.

REPORT OF INSPECTOR OF RIFLE PRACTICE.

OFFICE OF INSPECTOR OF RIFLE PRACTICE,
NEW HAMPSHIRE NATIONAL GUARD,
KEENE, February 15, 1892.

GEN. J. N. PATTERSON,
Commanding First Brigade, N. H. N. G.,
Concord, N. H.:

SIR, — In conformity with an order received from you, dated Concord, September 3, 1891, I visited all the companies comprised in the First Brigade, N. H. N. G., either at their armories or on the ranges, except the Peterborough Cavalry, Troop A, Captain Davis, and I have the honor to make the following report of the condition of the several companies in rifle practice during the season of 1891.

FIRST REGIMENT.

Company A, Captain Demeritt. Rifles in fair condition, but needed some work done on them. No armory practice. One half of the company present at the inspection.

Company B, Captain Shea. Rifles somewhat rusty, — were used in a rainy day parade a few days before and had not been cleaned. Do not have armory practice.

Company C, Captain Stevens. Rifles in excellent condition. Cannot have armory practice in their armory. They have never had a range of their own until late this season.

Company D, Captain Scott. Rifles in fair condition, but they are some of the oldest we have in the State, and are not fit for fine shooting on long ranges. No armory and but little range practice.

Company E, Captain Wilson. Upon the day fixed for the inspection of this company, I went to the armory five different times, but could not get in, so I did not see their rifles at all.

Company F, Captain McIntire. I made a second date for this company, as the first mentioned did not accommodate them, but on my arrival there could not find anyone on the range or gain admission to the armory. I found eleven rifles and some equipments of this company in the armory of Company C, at Manchester, left there a few days before, which were not in fair condition even. On my arrival home two days after, I found a postal from Captain McIntire dated the day before the day set for the inspection, stating that he had notified the men that I was coming, but that he should not be there.

Company H, Captain Soly. Rifles in good condition. Have armory practice at which one half of the company average to attend.

Company K, Captain O'Malley. Rifles in excellent condition. Have armory practice weekly during winter.

The companies of this regiment located in Manchester had had a field day and paraded one day during Merchants' Week, so they turned out for inspection, if at all, with very small numbers.

SECOND REGIMENT.

I inspected Company C, Captain Stevens; Company I, Captain Parmenter; and Company K, Captain Blanchard, on the range, on the day they gave a clam bake

and target shoot to members of the Nashua Battalion and their friends. A large number of all the companies were present and the day was a very enjoyable one, not only for the friends of the battalion whom they entertained, but a great deal of interest was manifested by all those shooting. Later in the season, I visited the armories of these companies and inspected the rifles. Company C rifles were in excellent condition. They have never had armory practice, but will this winter. Company I rifles in good condition. Will have armory practice this winter. Company K rifles in good condition. This company was organized last March, but I found them a good deal interested in rifle practice. Company C had moved their rifles from the basement to the drill hall, and Companies I and K will do so as soon as the cases are completed.

Company D, Captain Anderson (now Captain Mills). Rifles in excellent condition. The town will not allow them to have armory practice in the drill hall, and they did not have a permanent range until late in the season.

Company E, Captain Berry. Rifles in fair condition. Have armory practice and the interest in range practice is good.

Company F, Captain Pitman. The rifles in excellent condition, and the company has had thorough instruction in rifle practice and the care of the rifle from the captain.

Company G, Captain Upham, and Company H, Captain Shaw, the two companies located at Keene, constitute what is known as the "Keene Battalion." The rifles of these companies are in excellent condition. They have armory practice every two weeks and both companies have badges which they shoot for. The

interest in rifle practice started in these companies some time ago has not abated in the least.

THIRD REGIMENT.

Company A, Captain Gay. Rifles in excellent condition. Did not commence range practice until late. Have armory practice monthly during winter.

Company C, Captain Trenoweth. Condition of rifles excellent, and interest shown by company in both range and armory practice excellent.

Company D, Captain Hill. Rifles in good condition, but the company has not taken much interest in range practice.

Company E, Captain Brown. Rifles in excellent condition. This company was organized last winter, and they are starting with a good deal of interest.

Company F, Captain Ray. Rifles in excellent condition. This company is made up of members widely scattered, and considering that they are obliged to go three miles from the armory to their range, they have shown a great amount of interest in range practice.

Company G, Captain Downs. Rifles in excellent condition. Have armory practice fortnightly during the winter. Two and three hundred yard ranges very near armory, but have to go two and one half miles to shoot on long ranges.

Company H, Captain Ripley. Rifles in excellent condition. Will have armory practice this winter. Short ranges convenient, but long ranges some distance away and cannot be used until after haying.

TROOP A, CAVALRY.

I found on corresponding with Captain Davis that it was not practicable to get his command together for a

shoot, as it would take all of one day, and the time would be more profitably spent in their drill; therefore I did not ask the captain to call them out.

FIRST LIGHT BATTERY.

Captain S. S. Piper commanding. The day set for the inspection of this company was very rainy, so no shooting was done. They have six rifles issued by the State, which are in excellent condition. They have no range of their own, but hire the privilege of using other ranges. A very good amount of interest is shown.

There was on hand, held by the different companies at the beginning of the season and has been issued since, 70,325 rounds of ball ammunition, and of this amount 14,763 was reported on hand at the close of the season, making the amount of ammunition used during the season 55,562 rounds. Of this, 13,122 rounds were used by the First Regiment, 29,133 by the Second, 9,057 by the Third, and balance by Brigade Headquarters and First Light Battery.

I have not mentioned in my report of the several organizations the rifles which I found lacking in parts. It is impossible to use rifles much, either on range or in armory, without breaking some firing-pins, and I recommend that each captain keep some on hand, together with other small parts for repairs. I found a very small number of rifles which were so badly used up that they were entirely unserviceable, and I recommended that they be "turned in" and others got in their places, as they were "turned over" from companies disbanded to new companies, and were receipted for without having been inspected.

The most of the companies have proper marking

discs and danger signals, but I would recommend that during range practice a red flag of good size be displayed near the range, which will serve the double purpose of warning all persons of the danger, and show to those shooting the direction and strength of the wind.

I almost invariably found that those companies which had armory practice during the winter were more interested and acquired greater proficiency on the range than those which did not; but some companies are so situated in their armories that they cannot practice there, and I do not think it just to shut them out from range practice because they do not practice in their armories. Where it is impossible to shoot in armories, the aiming and sighting drills should be made a part of the winter's work.

My predecessors have urged that an appropriation be made for paying those attending the inspections of rifle practice and I would repeat it. In a great majority of cases the officers and men are obliged to lose a day's time to attend this inspection, and I think they should be paid a proper amount and then *ordered* out. The time which most of our men put into drills, etc., is in evenings, but range practice must be done during what is usually termed work hours.

I think it must be acknowledged by all that it is important that the New Hampshire National Guard, with all other good points, should be "good shooters," and this can only be brought about by the officers of each company taking an interest in it. I would earnestly recommend to all that they attend to this practice early in the season, before the days get cold and the nights and mornings foggy.

I was very much pleased with the attention shown me by all the officers and men I met while on my tour of

inspections, and my thanks are not only due them, but to Gen. A. D. Ayling for many valuable suggestions.

I remain, sir, very respectfully,

Your most obedient servant,

J. P. WELLMAN,

Major and Inspector of Rifle Practice.

SHARPSHOOTERS.

Highest possible score, 300. Requirements for qualification, 60 at 200 yards, 60 at 300 yards, 60 at 500 yards, 60 at 800 yards.

Insignia of this class, badge of gold, with bar inscribed "Sharpshooter." Officers and men requalifying for two years allowed an additional bar for each year, with date thereon.

FIRST BRIGADE.

	SCORES.	
	1890.	1891.
Major J. P. Wellman.....	247	248
Brigade Bugler W. C. Hammond.....	....	249
FIRST REGIMENT.		
<i>Co. A.</i>		
Captain George H. Demeritt.....	243	....
Sergeant W. H. Foss.....	252	....
<i>Co. B.</i>		
Lieutenant William Sullivan.....	....	254
Private P. J. Gardner.....	....	243
<i>Co. E.</i>		
Lieutenant Frank W. Tebbetts.....	262	285
Private C. E. Jeffrey.....	257	....
Private William H. Hickey.....	....	245
SECOND REGIMENT.		
Colonel A. W. Metcalf.....	242	....
Major F. O. Nims.....	251	256
Surgeon George W. Flagg.....	246	249
Quartermaster E. W. Emerson.....	....	248
Adjutant Sumner Nims.....	241	248
Hospital Steward J. M. Hovey.....	249	....
<i>Co. C.</i>		
Corporal H. F. Long.....	....	253
<i>Co. D.</i>		
Lieutenant Benton Mills.....	....	242
<i>Co. E.</i>		
Captain G. Ira Berry.....	....	244
Lieutenant F. E. Plummer.....	....	254
Private Carlos Pearl.....	....	252
<i>Co. F.</i>		
Captain C. H. Pitman.....	244	245
Lieutenant H. L. Bickford.....	245	247
Sergeant G. F. Davis.....	242	....
Sergeant C. E. Peabody.....	240	242
Private J. H. Hersey.....	240	246
Private H. C. Wentworth.....	240	....
Private W. T. Wentworth.....	250	....
Private F. L. Brawn.....	....	241

SHARPSHOOTERS. — *Continued.*

	SCORES.	
	1890.	1891.
SECOND REGIMENT. — <i>Continued.</i>		
<i>Co. G.</i>		
Lieutenant J. J. Colony.....	241	245
Lieutenant E. M. Keyes.....	252	250
Sergeant J. C. Reed.....	243	245
Sergeant C. E. Joslin.....	.....	250
Sergeant Charles T. Colony.....	246	243
Corporal William B. Hills.....	269	269
Corporal Ozro H. Holbrook.....	245	247
Private Frank J. Barrett.....	.....	257
Private Frank P. Gaynor.....	242	240
Private Herbert W. Keyes.....	248	241
Private Louis A. Piper.....	251	249
Private W. C. Robb.....	.....	243
Private Fred W. Walker.....	251	245
<i>Co. H.</i>		
Captain E. A. Shaw.....	256	272
Lieutenant F. E. Barrett.....	247	245
Lieutenant A. W. Buckminster.....	.....	241
Sergeant P. F. Balbridge.....	249	246
Sergeant J. C. Faulkner.....	248	276
Sergeant T. A. Smith.....	243	246
Sergeant W. E. Wright.....	250	246
Corporal A. O. Dexter.....	243	241
Corporal F. N. Barker.....	242	242
Corporal C. H. Tenney.....	248	271
Private D. M. Aldrich.....	.....	244
Private F. Chapman.....	.....	244
Private W. M. Chaplin.....	.....	246
Private A. W. Green.....	243	270
Private F. B. Narramore.....	.....	246
Private J. H. Plumb.....	252	249
Private J. F. Moore.....	251	.....
Private A. E. Bissell.....	242	.....
<i>Co. I.</i>		
Lieutenant W. H. Goodspeed.....	245	245
Lieutenant W. R. Seaman.....	243	251
Sergeant F. H. Thompson.....	245	254
Sergeant F. M. Kelley.....	245	258
Corporal M. H. Degnan.....	252	258
Private H. P. Valcour.....	252	248
<i>Co. K.</i>		
Sergeant A. E. Bowers.....	.....	248
Private J. W. Thurber.....	.....	257
Private P. T. Bowers.....	.....	249
THIRD REGIMENT.		
<i>Co. C.</i>		
Captain W. C. Trenoweth.....	.....	273
Lieutenant T. P. Davis.....	.....	263
Lieutenant A. L. Trenoweth.....	.....	268
Sergeant W. H. Chick.....	.....	253
Sergeant Alfred Frazier.....	.....	255

SHARPSHOOTERS. — *Continued.*

	SCORES.	
	1890.	1891.
THIRD REGIMENT. — <i>Continued.</i>		
<i>Co. C. — Continued.</i>		
Sergeant I. H. Smith.....	254
Private George H. Trenoweth.....	253
Private Fred R. Roach.....	258
Private M. W. Hazeltine.....	247
Private Robert H. Rolfe.....	250
Private Arthur M. Stearns.....	247
Private Joseph Florence.....	258
Private John M. Davis.....	260
<i>Co. E.</i>		
Captain H. B. Brown.....	248
Lieutenant H. P. Hammond.....	244
Sergeant O. G. Hammond.....	245
FIRST LIGHT BATTERY.		
Lieutenant J. A. Barker.....	252
Private E. H. Smith.....	248

MARKSMEN.

Highest possible score, 225. Requirements for qualification, 60 at 200 yards, 60 at 300 yards, 60 at 500 yards. Insignia of this class, badge of silver, with bar inscribed "Marksman." Officers and men requalifying for two years allowed an additional bar for each year, with date thereon.

FIRST BRIGADE.

	SCORES.	
	1890.	1891.
Major J. P. Wellman	183	185
Brigade Bugler W. C. Hammond .....	....	188
FIRST REGIMENT.		
Co. A.		
Captain G. H. Demeritt	182	....
Sergeant W. H. Foss	188	....
Corporal F. H. Keenan	184	....
Co. B.		
Lieutenant William Sullivan .....	....	192
Private P. J. Gardner .....	....	183
Co. C.		
Sergeant N. H. Roberts	181	....
Corporal G. W. Kimball	180	....
Co. E.		
Lieutenant F. W. Tebbetts	201	216
Private Harry Rogers	189	....
Private C. E. Jeffrey	192	....
Private William H. Hickey .....	....	184
SECOND REGIMENT.		
Colonel A. W. Metcalf	180	....
Major F. O. Nims	187	190
Surgeon George W. Flagg	182	189
Quartermaster E. W. Emerson .....	....	185
Adjutant Sumner Nims	181	186
Hospital Steward J. M. Hovey	189	....
Co. C.		
Corporal H. F. Long .....	....	187
Private John Shea .....	....	184
Co. D.		
Lieutenant Benton Mills .....	....	180
Co. E.		
Captain G. Ira Berry .....	....	185
Lieutenant F. E. Plummer .....	....	186
Private Carlos Pearl .....	....	190

MARKSMEN.—*Continued.*

	SCORES.	
	1890.	1891.
SECOND REGIMENT.— <i>Continued.</i>		
<i>Co. F.</i>		
Captain C. H. Pitman	184	185
Lieutenant H. L. Buckford	185	186
Sergeant G. F. Davis	182	....
Sergeant C. E. Peabody	180	181
Private J. H. Hersey	180	185
Private H. C. Wentworth	180	....
Private W. T. Wentworth	184	....
Private Ellsworth Case .....	....	182
Private F. L. Brawn .....	....	181
<i>Co. G.</i>		
Lieutenant John J. Colony	182	182
Lieutenant E. M. Keyes	188	190
Sergeant J. C. Reed	181	185
Sergeant Charles E. Joslin .....	....	185
Sergeant Charles T. Colony	183	182
Corporal O. H. Holbrook	183	185
Corporal William B. Hills	202	199
Private Frank J. Barrett .....	....	194
Private Frank P. Gaynor	182	180
Private Herbert W. Keyes	191	180
Private Louis A. Piper	188	188
Private W. C. Robb .....	....	183
Private F. W. Walker	188	181
<i>Co. H.</i>		
Captain E. A. Shaw	191	188
Lieutenant F. E. Barrett	182	183
Lieutenant A. W. Buckminster .....	....	181
Sergeant P. F. Babbidge	181	184
Sergeant J. C. Faulkner	188	204
Sergeant T. A. Smith	182	185
Sergeant W. E. Wright	190	186
Corporal A. O. Dexter	182	180
Corporal F. N. Barker	181	182
Corporal C. H. Tenney	181	188
Private D. M. Aldrich .....	....	183
Private F. Chapman .....	....	182
Private W. M. Chaplin .....	....	186
Private A. W. Green	181	185
Private F. B. Narramore .....	....	183
Private J. H. Plumb	186	189
Private J. F. Moore	191	....
Private Charles Taintor	182	....
Private C. F. Barker	180	....
Private A. E. Bissell	182	....
<i>Co. I.</i>		
Lieutenant W. H. Goodspeed	182	184
Lieutenant W. R. Seaman	182	189
Sergeant F. H. Thompson	183	185
Sergeant F. M. Kelley	184	198
Corporal M. H. Degnan	187	193
Private H. P. Valcour	191	185

MARKSMEN. — *Continued.*

	SCORES.	
	1890.	1891.
SECOND REGIMENT. — <i>Continued.</i>		
<i>Co. K.</i>		
Sergeant A. G. Shattuck	185
Sergeant A. E. Bowers	188
Private J. W. Thurber	192
Private P. T. Bowers	189
THIRD REGIMENT.		
<i>Co. C.</i>		
Captain W. C. Trenoweth	207
Lieutenant T. P. Davis	195
Lieutenant A. L. Trenoweth	205
Sergeant William H. Chick	189
Sergeant Alfred Frazier	191
Sergeant Isadore H. Smith	194
Private J. F. Goodenough	187
Private M. W. Hazeltine	186
Private Bennie Pride	196
Private George H. Trenoweth	189
Private Fred R. Roach	195
Private Robert H. Rolfe	184
Private A. M. Stearns	181
Private Joseph Florence	193
Private J. M. Davis	194
Private J. N. Maynard	198
Private C. B. Cook	186
<i>Co. E.</i>		
Captain H. B. Brown	183
Lieutenant H. P. Hammond	181
Sergeant O. G. Hammond	185
<i>Co. F.</i>		
Corporal Fred L. King	185
Private E. W. Towne	182
FIRST LIGHT BATTERY.		
Lieutenant J. A. Barker	192
Sergeant F. B. Stevens	182
Bugler H. Wingate	188
Private T. J. Wyatt	185
Private E. H. Smith	182
Private E. V. Rowe	181

MARKSMEN OF FIRST CLASS.

Highest possible score, 150. Requirements for qualification, 60 at 200 yards, 60 at 300 yards. Insignia of this class, buttons, to be worn on the collar of coat.

FIRST BRIGADE.

	SCORES.	
	1890.	1891.
Major J. P. Wellman	123	123
Brigade Bugler W. C. Hammond	123	122
FIRST REGIMENT.		
<i>Co. A.</i>		
Captain George H. Demeritt	122	....
Lieutenant F. E. Rollins	125	....
Sergeant W. H. Foss	126	....
Corporal James Hathaway	122	....
Corporal F. H. Keenan	124	....
Private L. H. Stenerwold	128	....
<i>Co. B.</i>		
Lieutenant William Sullivan .....	....	129
Private P. J. Gardner .....	....	122
Private J. J. Hurley .....	....	121
<i>Co. C.</i>		
Sergeant N. H. Roberts	121	....
Sergeant H. D. Gould	120	....
Corporal G. W. Kimball	122	....
Private E. L. Rose	120	....
<i>Co. D.</i>		
Sergeant David Robinson	120	....
<i>Co. E.</i>		
Lieutenant F. W. Tebbetts	138	146
Private Harry Rogers	128	....
Private C. E. Jeffrey	123	....
Private William H. Hickey .....	....	123
SECOND REGIMENT.		
Colonel A. W. Metcalf	120	....
Major F. O. Nims	126	127
Surgeon George W. Flagg	122	125
Quartermaster E. W. Emerson .....	....	120
Adjutant Sumner Nims	121	120
Hospital Steward J. M. Hovey	126	....
<i>Co. C.</i>		
Corporal H. F. Long .....	....	124
Private John Shea .....	....	124
<i>Co. D.</i>		
Lieutenant E. B. Coffin .....	....	120
Lieutenant Benton Mills .....	....	120
Private — Schneider .....	....	120

MARKSMEN OF FIRST CLASS. — *Continued.*

	SCORES.	
	1890.	1891.
SECOND REGIMENT. — <i>Continued.</i>		
<i>Co. E.</i>		
Captain G. Ira Berry	125	124
Lieutenant F. E. Plummer .....	.....	125
Sergeant W. W. Leighton .....	.....	120
Private Carlos Pearl .....	.....	126
Private Fred Hanscomb .....	.....	120
<i>Co. F.</i>		
Captain C. H. Pitman	120	123
Lieutenant H. L. Bickford	123	123
Sergeant G. F. Davis	122	.....
Sergeant C. E. Peabody	120	121
Corporal W. T. Wentworth	122	123
Private F. L. Brawn .....	.....	121
Private Ellsworth Case .....	.....	122
Private J. H. Hersey	120	123
<i>Co. G.</i>		
Lieutenant J. J. Colony	120	121
Lieutenant E. M. Keyes	127	130
Sergeant J. C. Reed	121	124
Sergeant Charles E. Joslin .....	.....	121
Sergeant Charles T. Colony	120	120
Corporal O. H. Holbrook	122	121
Corporal William B. Hills	134	130
Private F. J. Barrett .....	.....	128
Private F. P. Gaynor	122	120
Private H. W. Keyes	125	120
Private L. A. Piper	123	123
Private F. W. Walker	124	121
Private W. C. Robb .....	.....	123
<i>Co. H.</i>		
Captain E. A. Shaw	128	122
Lieutenant F. E. Barrett	120	122
Lieutenant A. W. Buckminster .....	.....	121
Sergeant P. F. Babbidge	121	122
Sergeant J. C. Faulkner	125	134
Sergeant T. A. Smith	122	123
Sergeant W. E. Wright	129	124
Corporal A. O. Dexter	120	120
Corporal F. N. Barker	121	121
Corporal C. H. Tenney	120	124
Private D. M. Aldrich .....	.....	121
Private F. Chapman .....	.....	120
Private W. M. Chaplin .....	.....	125
Private A. W. Green	121	125
Private F. B. Narramore .....	.....	120
Private J. H. Plumb	125	127
Private J. F. Moore	126	.....
Private Charles Taintor	122	.....
Private C. F. Barker	120	.....
Private A. E. Bissell	121	.....
<i>Co. I.</i>		
Lieutenant W. H. Goodspeed	122	120
Lieutenant W. R. Seaman	121	121

MARKSMEN OF FIRST CLASS.—*Continued.*

	SCORES.	
	1890.	1891.
SECOND REGIMENT.— <i>Continued.</i>		
<i>Co. I.—Continued.</i>		
Sergeant F. H. Thompson	123	122
Sergeant F. M. Kelley	124	134
Corporal M. H. Degnan	126	131
Private H. P. Valcour	130	122
<i>Co. K.</i>		
Captain W. I. Blanchard .....	.....	122
Lieutenant S. S. Spaulding .....	.....	121
Sergeant A. G. Shattuck .....	.....	123
Sergeant A. E. Bowers .....	.....	125
Private J. W. Thurber .....	.....	127
Private P. T. Bowers .....	.....	128
THIRD REGIMENT.		
<i>Co. A.</i>		
Private J. F. Hayes .....	.....	120
<i>Co. C.</i>		
Captain W. C. Trenoweth	129	141
Lieutenant T. P. Davis .....	.....	129
Lieutenant A. L. Trenoweth .....	.....	140
Sergeant Frank D. Hurd .....	.....	125
Sergeant William H. Chick	125	129
Sergeant Alfred Frazier .....	.....	129
Sergeant Isadore H. Smith .....	.....	128
Private E. J. Blanchard .....	.....	123
Private C. B. Cook .....	.....	125
Private John M. Davis .....	.....	128
Private Joseph Florence .....	.....	131
Private John F. Goodenough .....	.....	125
Private M. W. Hazeltine	126	124
Private J. N. Maynard .....	.....	133
Private Bennie Pride .....	.....	130
Private Frank Purmont .....	.....	122
Private Fred R. Roach .....	.....	132
Private Robert H. Rolfe .....	.....	124
Private A. M. Stearns .....	.....	121
Private Charles H. Staniels .....	.....	126
Private Charles B. Tasho .....	.....	124
Private George H. Trenoweth	122	126
<i>Co. E.</i>		
Captain H. B. Brown .....	.....	122
Lieutenant H. P. Hammond .....	.....	120
Sergeant O. G. Hammond .....	.....	123
<i>Co. F.</i>		
Corporal Fred L. King .....	.....	124
Private E. W. Towne .....	.....	121
<i>Co. G.</i>		
Captain E. S. Downs .....	.....	125

MARKSMEN OF FIRST CLASS.—*Continued.*

	SCORES.	
	1890.	1891.
FIRST LIGHT BATTERY.		
Lieutenant J. A. Barker	127
Sergeant F. B. Stevens	122
Sergeant L. W. Piper	122
Corporal Albion Gustafson	124
Bugler H. Wingate	126
Private E. H. Smith	121
Private E. V. Rowe	121
Private T. J. Wyatt	122
Private Fred Morrill	120

MARKSMEN OF SECOND CLASS.

Highest possible score, 75. Requirements for qualification, three scores, aggregating 51 at 300 yards. Insignia of this class, buttons with figure "2," to be worn on collar of coat.

FIRST BRIGADE.

	SCORES.	
	1890.	1891.
Major J. P. Wellman.....	63	61
Brigade Bugler W. C. Hammond.....	60	62
FIRST REGIMENT.		
<i>Co. A.</i>		
Captain G. H. Demeritt.....	61	..
Lieutenant F. E. Rollins.....	61	..
Sergeant W. H. Foss.....	61	..
Corporal James Hathaway.....	60	..
Corporal Frank H. Keenan.....	60	..
Private L. H. Stenerwold.....	64	57
Private H. A. Hadley.....	..	53
Private James Smith.....	..	55
<i>Co. B.</i>		
Lieutenant William Sullivan.....	..	53
Sergeant Thomas Conroy.....	..	51
Private P. J. Gardner.....	..	52
Private J. J. Hurley.....	..	55
<i>Co. C.</i>		
Sergeant E. H. Knights.....	..	52
Sergeant N. H. Roberts.....	61	..
Sergeant E. P. Carr.....	59	..
Sergeant C. B. Carr.....	52	..
Sergeant H. D. Gould.....	54	..
Corporal G. W. Kimball.....	62	..
Corporal G. P. Bennett.....	51	..
Private E. S. Snow.....	51	..
Private E. L. Rose.....	60	..
Private E. D. Little.....	..	53
<i>Co. D.</i>		
Sergeant D. Robinson.....	60	59
<i>Co. E.</i>		
Lieutenant F. W. Tebbetts.....	68	72
Private Harry Rogers.....	63	..
Private C. E. Jeffrey.....	62	..
Private William H. Hickey.....	..	62
<i>Co. H.</i>		
Captain J. H. Soly.....	..	55
Lieutenant T. Raiche.....	..	59
Lieutenant M. Maynard.....	..	54
Corporal L. Carneau.....	..	54
Corporal D. Vignault.....	..	54
Private O. Courteau.....	..	53

MARKSMEN OF SECOND CLASS.—*Continued.*

	SCORES.	
	1890.	1891.
FIRST REGIMENT.— <i>Continued.</i>		
<i>Co. H.—Continued.</i>		
Private A. Bernard.....	..	57
Private E. Leclerc.....	..	56
Private O. Caron.....	..	53
SECOND REGIMENT.		
Colonel A. W. Metcalf.....	60	..
Major F. O. Nims.....	60	60
Surgeon George W. Flagg.....	62	62
Quartermaster E. W. Emerson.....	..	60
Adjutant Sumner Nims.....	60	60
Hospital Steward J. M. Hovey.....	65	..
<i>Co. C.</i>		
Corporal H. F. Long.....	..	61
Private John Shea.....	..	60
<i>Co. D.</i>		
Lieutenant E. B. Coffin.....	..	60
Lieutenant Benton Mills.....	..	60
Corporal L. C. Hall.....	..	56
Private ——— Schneider.....	..	60
Private Towne.....	..	54
<i>Co. E.</i>		
Captain G. Ira Berry.....	62	62
Lieutenant F. E. Plummer.....	..	64
Sergeant W. W. Leighton.....	..	60
Sergeant Charles Tebbetts.....	..	52
Private Carlos Pearl.....	54	63
Private Fred Hanscomb.....	..	60
Private William Parshley.....	..	53
<i>Co. F.</i>		
Captain C. H. Pitman.....	61	62
Lieutenant H. L. Bickford.....	62	62
Lieutenant G. F. Davis.....	61	56
Sergeant C. E. Peabody.....	60	60
Corporal W. T. Wentworth.....	62	60
Corporal F. S. Gilmore.....	55	60
Corporal H. J. Pike.....	52	53
Private F. L. Brawn.....	..	60
Private Ellsworth Case.....	..	61
Private J. H. Hersey.....	60	60
Private E. Randall.....	60	..
Private C. C. Ricker.....	63	..
<i>Co. G.</i>		
Lieutenant J. J. Colony.....	60	60
Lieutenant E. M. Keyes.....	64	65
Sergeant J. C. Reed.....	61	64
Sergeant C. E. Joslin.....	..	61
Sergeant C. T. Colony.....	60	60
Corporal O. H. Holbrook.....	61	61
Corporal William B. Hills.....	66	64

MARKSMEN OF SECOND CLASS.—*Continued.*

	SCORES.	
	1890.	1891.
SECOND REGIMENT.— <i>Continued.</i>		
<i>Co. G.—Continued.</i>		
Private F. J. Barrett .....	..	64
Private F. P. Gaynor	62	60
Private H. W. Keyes	60	60
Private L. A. Piper	60	62
Private W. C. Robb .....	..	63
Private F. W. Walker	61	60
Private N. J. McDonald	55	..
Private G. F. Little	58	..
<i>Co. H.</i>		
Captain E. A. Shaw	63	61
Lieutenant F. E. Barrett	62	60
Lieutenant A. W. Buckminster .....	..	60
Sergeant P. F. Babbidge	60	61
Sergeant J. C. Faulkner	60	66
Sergeant T. A. Smith	62	60
Sergeant W. E. Wright	62	60
Corporal A. O. Dexter	60	60
Corporal F. N. Barker	60	61
Corporal C. H. Tenney	60	62
Corporal W. C. Howes	58	..
Private D. M. Aldrich .....	..	61
Private F. Chapman .....	..	60
Private W. M. Chaplin .....	..	61
Private A. W. Green	60	62
Private F. B. Narramore .....	..	60
Private J. H. Plumb	61	62
Private A. E. Bissell	60	..
Private C. F. Barker	60	..
Private J. F. Moore	61	..
Private Charles Taintor	62	..
<i>Co. I.</i>		
Lieutenant W. H. Goodspeed	61	60
Lieutenant W. R. Seaman	60	61
Sergeant H. F. Thompson	60	61
Sergeant F. M. Kelley	60	66
Corporal M. H. Degnan	60	65
Corporal H. P. Valcour	65	60
<i>Co. K.</i>		
Captain W. I. Blanchard .....	..	60
Lieutenant S. S. Spaulding .....	..	60
Lieutenant C. W. Howard .....	..	55
Sergeant A. G. Shattuck .....	..	63
Sergeant A. E. Bowers .....	..	62
Sergeant H. L. Hemenway .....	..	53
Private J. W. Thurber .....	..	65
Private P. T. Bowers .....	..	61
THIRD REGIMENT.		
<i>Co. A.</i>		
Private J. F. Hayes .....	..	60
Private J. T. Merrill .....	..	52

MARKSMEN OF SECOND CLASS.—*Continued.*

	SCORES.	
	1890.	1891.
THIRD REGIMENT.— <i>Continued.</i>		
<i>Co. C.</i>		
Captain W. C. Trenoweth.....	65	70
Lieutenant T. P. Davis.....	..	66
Lieutenant A. L. Trenoweth.....	58	70
Sergeant F. D. Hurd.....	56	63
Sergeant William H. Chick.....	60	61
Sergeant Alfred Frazier.....	..	66
Sergeant I. H. Smith.....	..	64
Corporal B. H. Nutting.....	..	61
Private E. J. Blanchard.....	..	63
Private E. D. Clark.....	..	57
Private C. B. Cook.....	..	63
Private John M. Davis.....	..	63
Private Joseph Florence.....	..	65
Private J. F. Goodenough.....	64	62
Private M. W. Hazeltine.....	..	63
Private Fred Lunderville.....	..	62
Private J. N. Maynard.....	..	67
Private Bennie Pride.....	..	64
Private F. W. Purmont.....	56	62
Private F. R. Roach.....	..	68
Private R. H. Rolfe.....	..	62
Private C. H. Stanfils.....	..	62
Private A. M. Stearns.....	..	60
Private G. H. Trenoweth.....	61	63
Private C. B. Tasho.....	..	61
<i>Co. E.</i>		
Captain H. B. Brown.....	..	60
Lieutenant G. D. Waldron.....	..	58
Lieutenant H. P. Hammond.....	..	60
Sergeant O. G. Hammond.....	..	62
Sergeant T. F. Clifford.....	..	51
<i>Co. F.</i>		
Corporal F. S. King.....	..	62
Private E. W. Towns.....	..	61
<i>Co. G.</i>		
Captain E. S. Downs.....	..	64
Lieutenant G. A. Freeto.....	..	56
Sergeant — Poland.....	..	56
FIRST LIGHT BATTERY.		
Lieutenant J. A. Barker.....	..	62
Sergeant F. W. Wilson.....	..	57
Sergeant J. B. Nourse.....	..	55
Sergeant L. W. Piper.....	..	62
Sergeant F. B. Stevens.....	51	62
Corporal A. Gustafson.....	..	61
Bugler Hiram Wingate.....	56	61
Private A. A. Puffer.....	..	54
Private J. F. Meledy.....	..	56
Private E. H. Smith.....	51	61
Private E. V. Rowe.....	..	61
Private T. J. Wyatt.....	..	62
Private Fred Morrill.....	55	60
Private J. F. Currier.....	..	57

MARKSMEN OF THIRD CLASS.

Highest possible score, 75. Requirements for qualification, three scores of 17 each at 200 yards. Insignia of this class, buttons, with figure "3," to be worn on collar of coat.

FIRST BRIGADE.

	SCORES.	
	1890.	1891.
Major J. P. Wellman.....	60	61
Brigade Bugler W. C. Hammond.....	63	60
Captain C. F. Sawyer.....	51	..
FIRST REGIMENT.		
Colonel G. M. L. Lane.....	51	..
Hospital Steward C. H. Harvey.....	52	..
<i>Co. A.</i>		
Captain G. H. Demeritt.....	61	..
Lieutenant F. E. Rollins.....	64	..
Lieutenant C. S. Clifford.....	52	..
Sergeant W. H. Foss.....	65	..
Sergeant E. D. Smith.....	51	..
Corporal James Hathaway.....	62	55
Corporal Edward Grimes.....	62	57
Corporal F. E. Russ.....	54	..
Corporal F. Keenan.....	64	..
Private Antony Nelson.....	53	..
Private H. A. Hadley.....	51	52
Private P. J. Markey.....	54	..
Private H. E. Hodgden.....	56	..
Private S. E. Welch.....	52	..
Private F. McCabe.....	54	53
Private J. P. Tobin.....	..	54
Private James Smith.....	..	52
Private F. E. Little.....	..	52
<i>Co. B.</i>		
Lieutenant William Sullivan.....	..	57
Sergeant Thomas Conroy.....	..	55
Corporal — McCarthy.....	..	55
Private M. J. Cullify.....	..	58
Private J. J. Connolly.....	..	54
Private P. J. Gardner.....	..	55
Private M. Geffney.....	..	56
Private J. P. Haggerty.....	..	51
Private J. J. Hurley.....	..	56
Private K. J. Hickey.....	..	52
Private J. Mahoney.....	..	53
Private J. J. Mahoney.....	..	55
Private James Mallen.....	..	51
Private William Mealey.....	..	54
Private D. J. Mahoney.....	..	52
<i>Co. C.</i>		
Lieutenant W. W. Dickey.....	..	54
Sergeant E. H. Knight.....	..	..
Sergeant G. A. Kling.....	..	55
Sergeant N. H. Roberts.....	60	..
Sergeant H. D. Gould.....	60	..
Corporal G. P. Bennett.....	60	..
Private G. W. Bennett.....	54	..

MARKSMEN OF THIRD CLASS.— *Continued.*

	SCORES.	
	1890.	1891.
FIRST REGIMENT.— <i>Continued.</i>		
Co. C.— <i>Continued.</i>		
Private E. L. Rose.....	60	..
Private A. E. Snow.....	51	..
Private E. D. Little.....	..	56
Private C. C. Wheeler.....	..	57
Private O. B. Smith.....	..	54
Private F. W. McKenion.....	..	54
Private A. S. Tirrell.....	52	..
Co. D.		
Sergeant David Robinson.....	60	59
Sergeant John Smiley.....	..	58
Sergeant William Steel.....	..	53
Corporal Gus Anderson.....	..	61
Corporal Josiah Bartlett.....	..	51
Musician Frank J. Tibbetts.....	..	51
Private W. P. Hill.....	..	56
Private W. H. Davis.....	..	51
Private John Scott.....	..	51
Private E. Pitts.....	54	..
Co. E.		
Lieutenant F. W. Tebbetts.....	70	74
Private Harry Rogers.....	65	..
Private C. E. Jeffrey.....	61	..
Private William H. Hickey.....	..	61
Co. F.		
Sergeant Charles S. Gillispie.....	51	..
Co. H.		
Captain J. H. Soly.....	..	53
Lieutenant T. Raiche.....	..	52
Lieutenant M. Maynard.....	53	58
Sergeant O. Ouclette.....	56	55
Corporal L. Comeau.....	..	55
Corporal D. Vignault.....	..	53
Corporal E. Doune.....	..	55
Corporal O. Gaudet.....	57	..
Private D. Francoeur.....	..	53
Private O. Caron.....	..	56
Private H. Tensignant.....	..	56
Private P. Fournie.....	..	54
Private A. Duval.....	..	54
Private J. Gourdeau.....	..	56
Private O. Cornteau.....	..	62
Private J. Hebert.....	..	56
Private N. Lemay.....	..	55
Private J. Patenaude.....	..	52
Private N. Raiche.....	..	53
Private W. Lavoire.....	..	53
Private A. Gehinas.....	..	54
Private A. Bromillett.....	..	55
Private E. Leclerc.....	..	51
Private A. Bernard.....	..	54

MARKSMEN OF THIRD CLASS.—*Continued.*

	SCORES.	
	1890.	1891.
FIRST REGIMENT.— <i>Continued.</i>		
<i>Co. K.</i>		
Captain P. H. O'Malley .....	..	51
Private M. Galvin.....	..	54
SECOND REGIMENT.		
Colonel A. W. Metcalf.....	60	..
Lieutenant-Colonel J. E. Tolles.....	..	53
Major F. O. Nims.....	66	67
Surgeon George W. Flagg.....	60	63
Quartermaster E. W. Emerson.....	..	60
Adjutant Sumner Nims.....	61	60
Commissary Sergeant F. H. Weeks.....	53	..
Hospital Steward J. M. Hovey	61	..
<i>Co. C.</i>		
Sergeant W. J. Elliott.....	..	56
Sergeant G. E. Richardson.....	53	56
Corporal H. F. Long.....	56	63
Private Thomas Diggins.....	..	52
Private H. F. Holt.....	..	60
Private J. F. Lazette.....	..	52
Private John Shea.....	..	64
Private John Walker.....	..	52
<i>Co. D.</i>		
Lieutenant E. B. Coffin.....	..	60
Lieutenant Benton Mills.....	..	60
Corporal L. C. Hall.....	..	52
Private G. M. Follett.....	..	51
Private — Towne.....	..	52
Private Schneider.....	..	60
<i>Co. E.</i>		
Captain G. Ira Berry.....	63	62
Lieutenant F. E. Plummer.....	..	61
Sergeant W. W. Leighton.....	55	60
Sergeant Charles Tebbetts.....	..	60
Private George Nutter.....	..	55
Private C. E. Leighton.....	..	58
Private F. Hanscomb.....	..	59
Private William Parshley.....	..	54
Private Fred Tibbets.....	..	55
Private Howard Buzzell.....	..	52
Private Carlos Pearl.....	..	63
Private Ernest Downe.....	..	53
Private Ed. Fuller.....	..	53
Private J. H. Paquette.....	..	55
Private W. V. Elliott.....	..	53
Private John Busch.....	..	54
Private George Elliott.....	..	53
Private Everett Thompson.....	..	52
Private C. H. Cole.....	54	..

MARKSMEN OF THIRD CLASS.—*Continued.*

	SCORES.	
	1890.	1891.
SECOND REGIMENT.— <i>Continued.</i>		
<i>Co. F.</i>		
Captain C. H. Pitman.....	60	61
Lieutenant H. S. Bickford.....	61	61
Lieutenant G. F. Davis.....	61	60
Sergeant C. E. Peabody.....	60	61
Sergeant H. J. Pike.....	55	53
Corporal W. T. Wentworth.....	60	63
Private F. L. Brawn.....	..	61
Private Ellsworth Case.....	..	61
Private Ed. F. Card.....	..	56
Private J. H. Hersey.....	60	63
Private F. S. Gilmore.....	60	..
Private W. H. McLeod.....	..	51
Private W. L. Randall.....	..	53
Private C. C. Ricker.....	55	57
Private E. Randall.....	59	..
Private J. F. Place.....	55	..
Private H. S. Rollins.....	51	..
<i>Co. G.</i>		
Captain E. O. Upham.....	56	54
Lieutenant J. J. Colony.....	60	61
Lieutenant E. M. Keyes.....	63	65
Sergeant J. C. Reed.....	60	60
Sergeant C. E. Joslin.....	..	60
Sergeant C. T. Colony.....	60	60
Sergeant D. H. Dickinson.....	55	..
Corporal O. H. Holbrook.....	61	60
Corporal W. B. Hills.....	68	66
Corporal E. W. Johnson.....	..	59
Private F. J. Barrett.....	..	54
Private F. P. Gaynor.....	60	60
Private H. W. Keyes.....	65	60
Private G. F. Little.....	59	58
Private L. A. Piper.....	63	61
Private W. C. Robb.....	..	60
Private F. W. Walker.....	63	61
Private O. H. Elmore.....	..	56
Private N. J. McDonald.....	61	..
Private C. E. Tottingham.....	55	..
<i>Co. H.</i>		
Captain E. A. Shaw.....	66	61
Lieutenant F. E. Barrett.....	60	62
Lieutenant A. W. Buckminster.....	56	60
Sergeant P. F. Babbidge.....	61	61
Sergeant J. C. Faulkner.....	65	68
Sergeant T. A. Smith.....	60	63
Sergeant A. G. Isham.....	..	53
Sergeant W. E. Wright.....	67	64
Corporal A. O. Dexter.....	60	60
Corporal J. P. Flanagan.....	..	54
Corporal F. N. Barker.....	61	60
Corporal C. H. Tenney.....	60	62
Private D. M. Aldrich.....	..	60
Private F. Chapman.....	..	60
Private W. M. Chaplin.....	..	64
Private A. W. Green.....	61	63
Private W. F. Harris.....	..	53

MARKSMEN OF THIRD CLASS.—*Continued.*

	SCORES.	
	1890.	1891.
SECOND REGIMENT.— <i>Continued.</i>		
<i>Co. H.—Continued.</i>		
Private F. B. Narramore.....	..	60
Private J. H. Plumb.....	64	65
Private C. Taintor.....	60	58
Private J. F. Moore.....	65	..
Private H. S. Foster.....	54	..
Private C. F. Barker.....	60	..
Private A. E. Bisseil.....	61	..
Private W. C. Howes.....	66	..
<i>Co. I.</i>		
Lieutenant W. H. Goodspeed.....	61	60
Lieutenant W. R. Seaman.....	61	60
Sergeant F. H. Thompson.....	62	62
Sergeant F. M. Kelley.....	64	68
Sergeant J. H. Moran.....	63	..
Corporal M. H. Degnan.....	66	66
Corporal H. F. Tessier.....	52	55
Private H. P. Valcour.....	65	62
Private J. F. Rivers.....	..	61
Private John Flanagan.....	..	60
<i>Co. K.</i>		
Captain W. I. Blanchard.....	..	62
Lieutenant S. S. Spaulding.....	..	61
Lieutenant C. W. Howard.....	..	51
Sergeant A. G. Shattuck.....	..	60
Sergeant A. E. Bowers.....	..	63
Sergeant H. L. Hemmaway.....	..	56
Corporal E. A. A. Dionne.....	..	58
Private J. W. Thurber.....	..	62
Private P. T. Bowers.....	..	67
THIRD REGIMENT.		
<i>Co. A.</i>		
Corporal H. S. Adams.....	..	52
Private J. F. Hayes.....	..	60
Private J. T. Merrill.....	..	56
Private C. H. Merrill.....	..	58
<i>Co. C.</i>		
Captain W. C. Trenoweth.....	64	71
Lieutenant T. P. Davis.....	56	63
Lieutenant A. L. Trenoweth.....	58	70
Sergeant F. D. Hurd.....	55	62
Sergeant William H. Chick.....	64	68
Sergeant Alfred Frazier.....	58	63
Sergeant I. H. Smith.....	55	64
Corporal Bion Nutting.....	54	54
Private E. J. Blanchard.....	..	60
Private H. H. Coulter.....	..	62
Private E. D. Clark.....	..	63
Private C. B. Cook.....	..	62
Private J. M. Davis.....	..	65
Private W. K. Daggett.....	..	63

MARKSMEN OF THIRD CLASS. — *Continued.*

	SCORES.	
	1890.	1891.
THIRD REGIMENT. — <i>Continued.</i>		
<i>Co. C. — Continued.</i>		
Private Joseph Florence .....	..	66
Private J. E. Goodenough	62	63
Private M. W. Hazeltine .....	..	61
Private James Keegan .....	..	53
Private Fred Lunderville .....	..	56
Private J. N. Maynard .....	..	66
Private Bennie Pride	60	66
Private F. W. Purmont	54	60
Private F. R. Roach .....	..	64
Private R. H. Rolfe .....	..	62
Private B. H. Roby .....	..	60
Private Herbert Smith .....	..	61
Private C. H. Sargent .....	..	51
Private A. M. Stearns	61	61
Private C. H. Staniels .....	..	64
Private C. B. Tasho .....	..	62
Private G. H. Trenoweth	61	63
Private O. J. Nelson	58	..
<i>Co. E.</i>		
Captain H. B. Brown .....	..	62
Lieutenant G. D. Waldron .....	..	53
Lieutenant H. P. Hammond .....	..	60
Sergeant O. G. Hammond .....	..	61
Sergeant T. F. Clifford .....	..	55
Sergeant F. L. Richardson .....	..	57
Private E. L. Foster .....	..	54
Private G. N. Woodward .....	..	57
<i>Co. F.</i>		
Sergeant L. S. Gray .....	..	57
Corporal F. L. King .....	..	62
Private E. W. Towns .....	..	60
Private A. L. Kenney .....	..	56
<i>Co. G.</i>		
Captain E. S. Downs .....	..	61
Lieutenant B. M. Reynolds .....	..	61
Lieutenant G. A. Freeto .....	..	64
Sergeant G. Poland .....	..	61
Private H. Thompson .....	..	61
Private N. Rock .....	..	57
<i>Co. H.</i>		
Sergeant George Bythrow .....	..	61
Corporal E. A. Bythrow .....	..	61
FIRST LIGHT BATTERY.		
Lieutenant J. A. Barker	57	65
Sergeant F. W. Wilson	52	60
Sergeant J. B. Nourse	53	53
Sergeant L. W. Piper .....	..	60
Sergeant F. B. Stevens	58	60
Sergeant C. H. Rowe .....	..	55
Corporal O. P. Stone	55	55

MARKSMEN OF THIRD CLASS. — *Continued.*

	SCORES.	
	1890.	1891.
FIRST LIGHT BATTERY. — <i>Continued.</i>		
Corporal A. Gustafson .....	..	63
Bugler H. Wingate	59	65
Bugler U. L. George	56	53
Private A. A. Puffer	52	52
Private George Taylor .....	..	61
Private J. F. Meledy .....	..	55
Private E. H. Smith	56	60
Private E. V. Rowe	55	60
Private W. Davidson	54	59
Private H. Johnson	54	57
Private Fred Robie	55	58
Private F. O'Connell .....	..	55
Private T. J. Wyatt .....	..	60
Private F. Morrill	53	60
Private J. F. Currier	51	60
Private W. Bartlett	53	..
Private O. A. Manning	53	..
Private W. Seaward	55	..
Private A. E. Eastman	53	..
Private A. H. Seaver	52	..

RETURN

OF THE

NEW HAMPSHIRE NATIONAL GUARD.

	Commissioned Officers.	Enlisted Men.	Aggregate.
Commander-in-Chief and Staff	11	.....	11
Brigade Commander and Staff	10	5	15

FIRST REGIMENT. — HEADQUARTERS, MANCHESTER.

Field and Staff	8	5	13
Band .....	..	24	24
Co. A, Dover	3	43	46
Co. B, Manchester	3	44	47
Co. C, Manchester	3	34	37
Co. D, Dover	3	49	52
Co. E, Manchester	3	38	41
Co. F, Derry	3	38	41
Co. H, Manchester	3	37	40
Co. K, Manchester	3	50	53
Strength of First Regiment	32	362	394

SECOND REGIMENT.—HEADQUARTERS, KEENE.

	Commissioned Officers.	Enlisted Men.	Aggregate.
Field and Staff.....	9	5	14
Band.....	..	24	24
Co. C, Nashua.....	3	39	42
Co. D, Milford.....	3	37	40
Co. E, Rochester.....	2	43	45
Co. F, Farmington.....	3	29	32
Co. G, Keene.....	3	36	39
Co. H, Keene.....	3	35	38
Co. I, Nashua.....	3	39	42
Co. K, Nashua.....	3	47	50
Strength of Second Regiment.....	32	334	366

THIRD REGIMENT.—HEADQUARTERS, CONCORD.

	9	5	14
Field and Staff.....	9	5	14
Band.....	..	24	24
Co. A, New London.....	3	38	41
Co. C, Concord.....	3	39	42
Co. D, Pittsfield.....	3	33	36
Co. E, Concord.....	3	39	42
Co. F, Bristol.....	3	36	39
Co. G, Lebanon.....	2	44	46
Co. H, Franklin Falls.....	3	39	42
Co. K, Laconia.....	3	40	43
Strength of Third Regiment.....	32	337	369

CAVALRY.

	Commissioned Officers.	Enlisted Men.	Aggregate.
Troop A, Peterborough.....	3	55	58
Strength of Cavalry	3	55	58

ARTILLERY.

First Battery, Manchester	4	68	72
Strength of Artillery	4	68	72

RECAPITULATION.

Commander-in-Chief and Staff	11	..	11
Brigade Commander and Staff	10	5	15
Infantry	96	1,033	1,129
Cavalry	3	55	58
Artillery	4	68	72
Total	124	1,161	1,285

REGISTER

OF THE

NEW HAMPSHIRE NATIONAL GUARD.

HIS EXCELLENCY HIRAM A. TUTTLE, *Governor and Commander-in-Chief.*

INAUGURATED JANUARY 8, 1891.

GENERAL STAFF.

NAME.	Rank.	Residence.	Date of Commission.
Augustus D. Ayling, Adj. Gen..	Maj. Gen. ...	Concord	July 15, 1879
Albert N. Dow, Insp. Gen.	Brig. Gen. ...	Exeter	March 5, 1891
Charles W. Stevens, Q. M. Gen..	Brig. Gen. ...	Nashua	Jan. 28, 1891
Oliver A. Gibbs, Com. Gen.	Brig. Gen. ...	Dover	Jan. 28, 1891
Charles H. Bartlett, J. A. Gen. ...	Brig. Gen. ...	Manchester ...	Jan. 28, 1891
Ferdinand A. Stillings, Surg. Gen.	Brig. Gen. ...	Concord	Jan. 28, 1891
Arthur E. Clarke, Aid-de-Camp	Colonel	Manchester ...	Jan. 28, 1891
George A. Sanders, “	Colonel	Laconia	Jan. 28, 1891
Frank W. Maynard, “	Colonel	Nashua	Jan. 28, 1891
Rufus N. Elwell, “	Colonel	Exeter	Jan. 28, 1891

FIRST BRIGADE.

NAME.	Rank.	Residence.	Date of Commission.
Joab N. Patterson	Brig. Gen....	Concord	May 15, 1889
Frank W. Rollins, Assistant Adjutant-General.....	Lieut. Col. ..	Concord	March 7, 1891
Charles E. Faxon, Assistant Inspector-General.....	Major	Nashua	May 29, 1890
Jerry P. Wellman, Inspector Rifle Practice	Major	Keene	May 20, 1889
Irving A. Watson, Medical Director.....	Lieut. Col. ..	Concord	May 20, 1889
Arthur H. Chase, Judge Advocate	Major	Concord	March 7, 1891
George R. Leavitt, Quarterm'r..	Captain.....	Laconia.....	May 20, 1889
Charles F. Sawyer, Commissary.	Captain.....	Dover.....	April 16, 1891
Daniel H. Gienty, Aid-de-Camp.	Captain.....	Concord	April 15, 1886
Frank L. Kimball, Aid-de-Camp.	Captain.....	Nashua	May 28, 1889

FIRST REGIMENT.

FIELD AND STAFF.

George M. L. Lane *	Colonel	Manchester ...	Jan. 5, 1892
Miner G. Frye.....	Lieut. Col....	Derry Depot...	May 17, 1892
Walter W. Scott	Major	Dover.....	May 17, 1892
Frank B. Perkins, Adjutant	First Lieut...	Manchester ...	Feb. 24, 1890
George F. Higgins	First Lieut...	Manchester ...	June 6, 1892
Harry E. Parker, Paymaster....	Captain.....	Manchester ...	March 3, 1890
Cornelius F. Starr, Surgeon.....	Major	Manchester ...	June 6, 1892
Luther F. McKinney, Chaplain.	Captain.....	Manchester ...	Jan. 10, 1887

COMPANY A.

George H. Demeritt	Captain.....	Dover.....	Sept. 1, 1881
Charles S. Clifford *	First Lieut...	Dover.....	May 16, 1892
Frank E. Rollins *	Second Lieut	Dover.....	May 16, 1892

* Re-commissioned.

COMPANY B.

NAME.	Rank.	Residence.	Date of Commission.
Daniel F. Shea	Captain.....	Manchester ...	Mar. 11, 1891
William Sullivan	First Lieut...	Manchester ...	Aug. 30, 1890
Thomas J. Bresnahan	Second Lieut	Manchester ...	Aug. 30, 1890

COMPANY C.

John Gannon, Jr.	Captain.....	Manchester ...	May 25, 1892
George B. Rogers	First Lieut. .	Manchester ...	Feb. 3, 1892
Edward H. Knight.....	Second Lieut	Manchester ...	Feb. 3, 1892

COMPANY D.

Louis Goldschmidt	Captain.....	Dover.....	June 1, 1892
Ned E. Stiles	First Lieut. .	Dover.....	June 1, 1892
David Robinson	Second Lieut	Dover.....	June 1, 1892

COMPANY E.

Frank W. Tebbetts	Captain.....	Manchester ...	Jan. 29, 1892
Henry I. Rowell.....	First Lieut...	Manchester ...	Mar. 29, 1892
James E. Smith.....	Second Lieut	Manchester ...	April 26, 1892

COMPANY F.

Leighton H. McIntire	Captain.....	Derry Depot...	April 8, 1891
Otis T. Campbell.....	First Lieut...	Derry Depot...	June 3, 1892
Charles W. Abbott.....	Second Lieut	Derry Depot...	June 3, 1892

COMPANY H.

Jérémie H. Soly.....	Captain.....	Manchester ...	Dec. 16, 1889
McDérique Maynard	First Lieut...	Manchester ...	May 4, 1892
Louis Comeau.....	Second Lieut	Manchester ...	May 4, 1892

COMPANY K.

NAME.	Rank.	Residence.	Date of Commission.
Patrick H. O'Malley *.....	Captain.....	Manchester ...	Dec. 30, 1891
John Fitzmaurice.....	First Lieut...	Manchester ...	May 13, 1890
Michael J. F. Ward.....	Second Lieut	Manchester ...	June 12, 1891

SECOND REGIMENT.

FIELD AND STAFF.

Albert W. Metcalf.....	Colonel.....	Keene	Aug. 1, 1889
Jason E. Tolles.....	Lieut. Col...	Nashua	Aug. 1, 1889
Francis O. Nims	Major	Keene	Aug. 1, 1889
Sumner Nims, Adjutant	First Lieut...	Keene	Sept. 16, 1889
Eugene W. Emerson, Quart'm'r	First Lieut...	Farmington...	Sept. 16, 1889
Charles A. Roby, Paymaster	Captain.....	Nashua	Nov. 3, 1887
George W. Flagg, Surgeon.....	Major	Keene	May 10, 1886
William H. Nute, Asst. Surgeon	Captain.....	Farmington...	May 10, 1886
Henry B. Smith, Chaplain	Captain.....	Nashua	Sept. 16, 1889

COMPANY C.

Hiram S. Stevens	Captain.....	Nashua	Mar. 19, 1888
William H. Livingston	First Lieut...	Nashua	Feb. 23, 1891
Charles A. Poff.....	Second Lieut	Nashua	Feb. 23, 1891

COMPANY D.

Benton Mills	Captain.....	Milford	Dec. 24, 1891
Everett B. Coffin.....	First Lieut...	Milford	Jan. 27, 1891
Leon C. Hall.....	Second Lieut	Milford	Dec. 24, 1891

* Re-commissioned.

COMPANY E.

NAME.	Rank.	Residence.	Date of Commission.
G. Ira Berry	Captain.....	Rochester	Mar. 25, 1890
Fred E. Plummer.....	First Lieut...	Rochester	June 9, 1891

COMPANY F.

Charles H. Pitman *.....	Captain.....	Farmington...	Feb. 25, 1892
Hosea L. Bickford	First Lieut. .	Farmington...	Mar. 16, 1891
Hermon J. Pike.....	Second Lieut	Farmington...	Mar. 12, 1892

COMPANY G.

Edwin O. Upham.....	Captain.....	Keene	July 24, 1890
John J. Colony.....	First Lieut. .	Keene	Mar. 27, 1891
Eugene M. Keyes.....	Second Lieut	Keene	Mar. 27, 1891

COMPANY H.

Elbridge A. Shaw.....	Captain.....	Keene	Aug. 1, 1890
Fred E. Barrett	First Lieut...	Keene	Aug. 1, 1890
Paul F. Babbidge	Second Lieut	Keene	June 8, 1892

COMPANY I.

Willis H. Goodspeed.	Captain.....	Nashua	May 25, 1892
William R. Seaman	First Lieut...	Nashua	May 25, 1892
Frank H. Thompson.....	Second Lieut	Nashua	May 25, 1892

COMPANY K.

Walter I. Blanchard.....	Captain.....	Nashua	Mar. 18, 1891
Charles W. Howard	First Lieut...	Nashua	Feb. 25, 1892
Arthur G. Shattuck	Second Lieut	Nashua	Feb. 25, 1892

* Re-commissioned.

THIRD REGIMENT.

FIELD AND STAFF.

NAME.	Rank.	Residence.	Date of Commission.
True Sanborn, Jr.....	Colonel.....	Chichester.....	May 15, 1889
Nathan H. Randlett.....	Lieut. Col....	Lebanon.....	May 15, 1889
George N. Cheever.....	Major.....	Franklin.....	Mar. 11, 1891
Robert H. Rolfe, Adjutant.....	First Lieut...	Concord.....	June 11, 1892
Arthur M. Dodge, Quarterm'r..	First Lieut...	Hampton Falls	May 22, 1889
William Tutherly, Paymaster..	Captain.....	Claremont....	May 22, 1889
Frank T. Moffett, Surgeon.....	Major.....	Littleton.....	May 22, 1889
Robert Burns, Asst. Surgeon....	Captain.....	Plymouth.....	May 22, 1889
James K. Ewer, Chaplain.....	Captain.....	Concord.....	May 22, 1889

COMPANY A.

Andrew J. Sargent.....	Captain.....	New London..	June 14, 1892
Frank P. Messer.....	First Lieut...	New London..	Feb. 25, 1891
Edwin F. Hastings.....	Second Lieut	New London..	Feb. 25, 1891

COMPANY C.

William C. Trenoweth.....	Captain.....	Concord.....	Sept. 16, 1889
Thomas P. Davis.....	First Lieut...	Concord.....	Feb. 26, 1891
Alfred L. Trenoweth.....	Second Lieut	Concord.....	Feb. 26, 1891

COMPANY D.

Delta H. Merrill.....	Captain.....	Pittsfield.....	Feb. 23, 1892
Edwin B. Drake.....	First Lieut...	Barnstead.....	Feb. 23, 1892
Frank W. Wheeler.....	Second Lieut	Pittsfield.....	Feb. 23, 1892

COMPANY E.

Harry B. Brown.....	Captain.....	Concord.....	April 14, 1891
George D. Waldron.....	First Lieut...	Concord.....	April 14, 1891
Harry P. Hammond.....	Second Lieut	Concord.....	April 14, 1891

COMPANY F.

NAME.	Rank.	Residence.	Date of Commission.
Orrin B. Ray	Captain.....	Bristol	Oct. 21, 1891
Leonard S. Gray	First Lieut...	Bristol	Oct. 21, 1891
Alonzo D. Emery	Second Lieut	Bristol	Oct. 21, 1891

COMPANY G.

George A. Freeto	Captain.....	Lebanon.....	June 1, 1892
Benjamin M. Reynolds.....	First Lieut...	Lebanon.....	June 1, 1892

COMPANY H.

Amos S. Ripley	Captain.....	Franklin Falls	Mar. 25, 1891
Hollis K. Smith.....	First Lieut...	Franklin Falls	Mar. 25, 1891
Albion W. Rollins	Second Lieut	Franklin Falls	Mar. 25, 1891

COMPANY K.

Edmund Tetley.....	Captain.....	Laconia.....	May 28, 1892
James B. Fernald.....	First Lieut...	Laconia.....	May 28, 1892
George E. Stevens.....	Second Lieut	Laconia.....	May 28, 1892

CAVALRY.

TROOP A.

Charles B. Davis.....	Captain.....	Peterborough .	Aug. 27, 1890
Charles H. Dutton.....	First Lieut...	Peterborough .	Aug. 27, 1890
Forrest G. Field.....	Second Lieut	Peterborough .	Aug. 27, 1890

ARTILLERY.

FIRST BATTERY.

Samuel S. Piper.....	Captain.....	Manchester ...	May 1, 1876
Edward H. Currier	First Lieut...	Manchester ...	April 6, 1882
Silas R. Wallace *.....	First Lieut...	Manchester ...	Mar. 27, 1891
John A. Barker *.....	Second Lieut	Manchester ...	Mar. 27, 1891

* Re-commissioned.

RESIGNATIONS AND DISCHARGES

OF

COMMISSIONED OFFICERS.

FIRST REGIMENT.

NAME.	Rank and Organization.	Date of Commission	Date of Discharge.	Remarks.
Richard M. Scammon ..	Lieut. Col.	Dec. 21, 1886	April 6, 1892	Resigned.
Thomas W. Wilkinson..	1st Lt. and Q.M.	Jan. 27, 1890	Mar. 10, 1892	Resigned.
Louis C. Stevens	Capt. Co. C	May 29, 1891	May 23, 1892	Resigned.
Wilber W. Dickey.....	1st Lt. Co. C	Oct. 8, 1891	Dec. 29, 1891	Resigned.
Bartlett N. Wilson	Capt. Co. E	Apr. 13, 1887	Dec. 26, 1891	Cashier'd
John B. Rodgers.....	2d Lt. Co. E	May 18, 1888	Apr. 13, 1892	Resigned.
Charles F. Gillespie.....	2d Lt. Co. F	April 8, 1891	May 31, 1892	Resigned.
Treflé Raiche.....	1st Lt. Co. H....	June 6, 1891	Apr. 15, 1892	Resigned.

SECOND REGIMENT.

Freeman C. Anderson ...	Capt. Co. D	Jan. 27, 1891	Dec. 4, 1891	Resigned.
James Geddis	2d Lt. Co. E	June 9, 1891	June 11, 1892	Resigned.
George F. Davis.....	2d Lt. Co. F	Mar. 16, 1891	Mar. 11, 1892	Resigned.
Albert W. Buckminster.	2d Lt. Co. H	Aug. 1, 1890	May 31, 1892	Resigned.
Edwin H. Parmenter ...	Capt. Co. I	Sept. 1, 1884	May 25, 1892	Resigned.
Samuel S. Spalding.....	1st Lt. Co. K....	Mar. 18, 1891	Dec. 2, 1891	Resigned.

THIRD REGIMENT.

Clarence B. Randlett ...	1st Lt. and Adjt.	May 22, 1889	June 4, 1892	Resigned.
Baxter Gay	Capt. Co. A	Feb. 25, 1891	May 31, 1892	Resigned.
Forest F. Hill.....	Capt. Co. D	July 3, 1888	Jan. 20, 1892	Resigned.
Eugene S. Downs	Capt. Co. G	Oct. 10, 1888	May 21, 1892	Resigned.
Forest Hammond	2d Lt. Co. G	June 1, 1892	Oct. 15, 1892	Resigned.

COMMISSIONS ISSUED.

FIRST REGIMENT.

NAME.	Rank and Organization.	Date of Commission
George M. L. Lane.....	Colonel	Jan. 5, 1892
Richard M. Scammon.....	Lieutenant-Colonel.....	Jan. 5, 1892
Miner G. Frye	Lieutenant-Colonel.....	May 17, 1892
Walter W. Scott.....	Major	May 17, 1892
George F. Higgins.....	First Lieut. and Q. M.	June 6, 1892
Cornelius F. Starr	Major and Surgeon	June 6, 1892
Charles S. Clifford	First Lieutenant Co. A	May 16, 1892
Frank E. Rollins	Second Lieutenant Co. A...	May 16, 1892
John Gannon, Jr.	Captain Co. C	May 25, 1892
George B. Rodgers	First Lieutenant Co. C	Feb. 3, 1892
Edward H. Knights	Second Lieutenant Co. C...	Feb. 3, 1892
Louis Goldschmidt	Captain Co. D	June 1, 1892
Ned E. Stiles.....	First Lieutenant Co. D	June 1, 1892
David Robinson	Second Lieutenant Co. D ..	June 1, 1892
Frank W. Tebbetts.....	Captain Co. E	Jan. 29, 1892
Henry I. Rowell	First Lieutenant Co. E	Mar. 29, 1892
James E. Smith.....	Second Lieutenant Co. E...	Apr. 26, 1892
Otis T. Campbell	First Lieutenant Co. F	June 3, 1892
Charles W. Abbott.....	Second Lieutenant Co. F...	June 3, 1892
Médérique Maynard.....	First Lieutenant Co. H	May 4, 1892
Louis Comeau	Second Lieutenant Co. H ..	May 4, 1892
Patrick H. O'Malley.....	Captain Co. K.....	Dec. 30, 1891

SECOND REGIMENT.

NAME.	Rank and Organization.	Date of Commission
Benton Mills.....	Captain Co. D.....	Dec. 24, 1891
Leon C. Hall.....	Second Lieutenant Co. D..	Dec. 24, 1891
Charles H. Pitman.....	Captain Co. F.....	Feb. 25, 1892
Hermon J. Pike.....	Second Lieutenant Co. F..	Mar. 12, 1892
Paul F. Babbidge.....	Second Lieutenant Co. H..	June 8, 1892
Willis H. Goodspeed.....	Captain Co. I.....	May 25, 1892
William R. Seaman.....	First Lieutenant Co. I.....	May 25, 1892
Frank H. Thompson.....	Second Lieutenant Co. I....	May 25, 1892
Charles W. Howard.....	First Lieutenant Co. K....	Feb. 25, 1892
Arthur G. Shattuck.....	Second Lieutenant Co. K..	Feb. 25, 1892

THIRD REGIMENT.

Robert H. Rolfe.....	First Lieutenant and Adjt..	June 11, 1892
Andrew J. Sargent.....	Captain Co. A.....	June 14, 1892
Delta H. Merrill.....	Captain Co. D.....	Feb. 23, 1892
Edwin B. Drake.....	First Lieutenant Co. D.....	Feb. 23, 1892
Frank W. Wheeler.....	Second Lieutenant Co. D..	Feb. 23, 1892
George A. Freeto.....	Captain Co. G.....	June 1, 1892
Benjamin M. Reynolds.....	First Lieutenant Co. G....	June 1, 1892
Forest Hammond.....	Second Lieutenant Co. G....	June 1, 1892
Edmund Tetley.....	Captain Co. K.....	May 28, 1892
James B. Fernald.....	First Lieutenant Co. K....	May 28, 1892
George E. Stevens.....	Second Lieutenant Co. K..	May 28, 1892

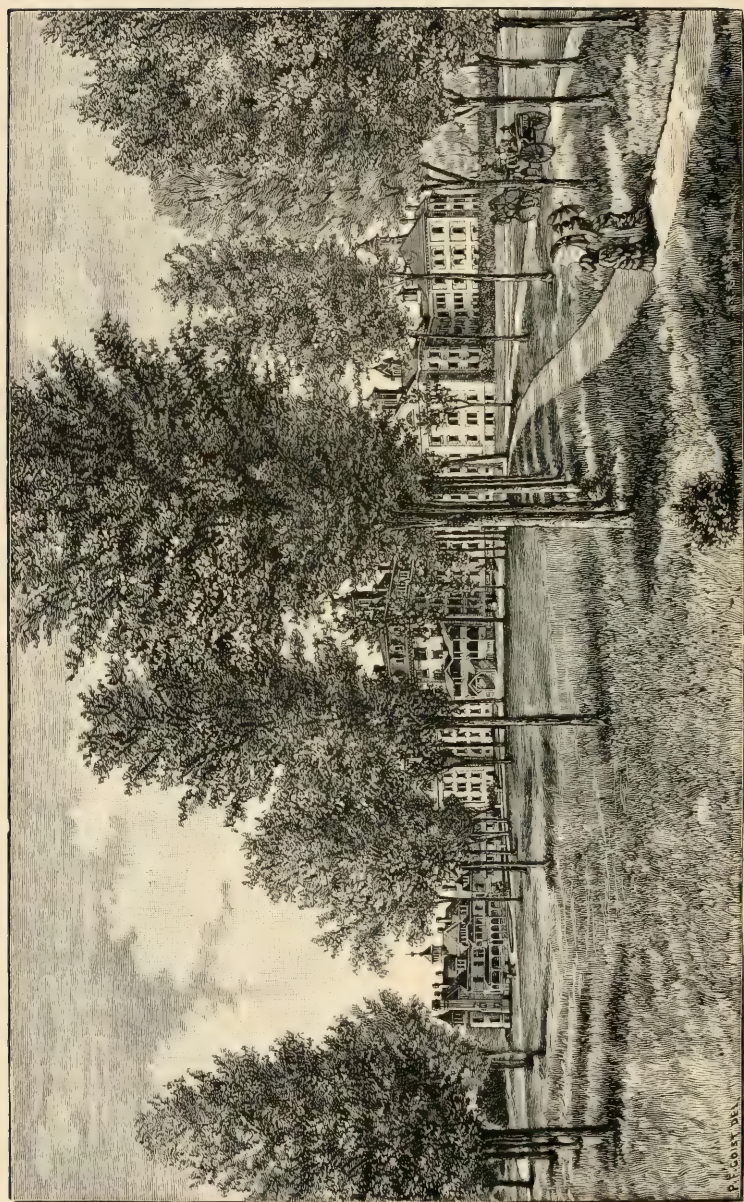
ENLISTED MEN DROPPED FROM THE ROLLS AS
DESERTERS.

FIRST REGIMENT.

Private Alton A. LaneCo. C | Private James M. Wigmore Co. E

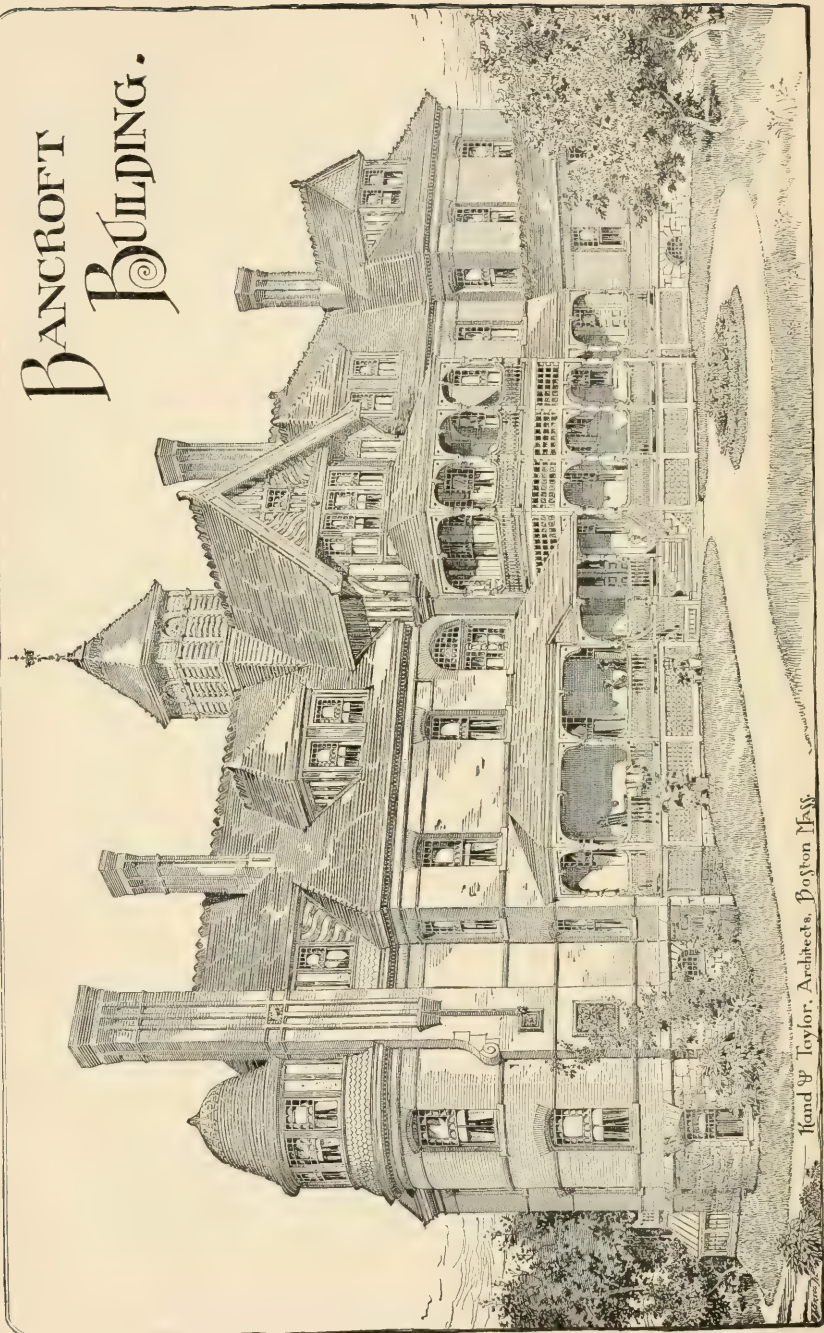
THIRD REGIMENT.

Privates Harry B. Colcord, John T. Smith, Co. F.
Privates Arthur C. Culver, Henry Chase, Co. G.

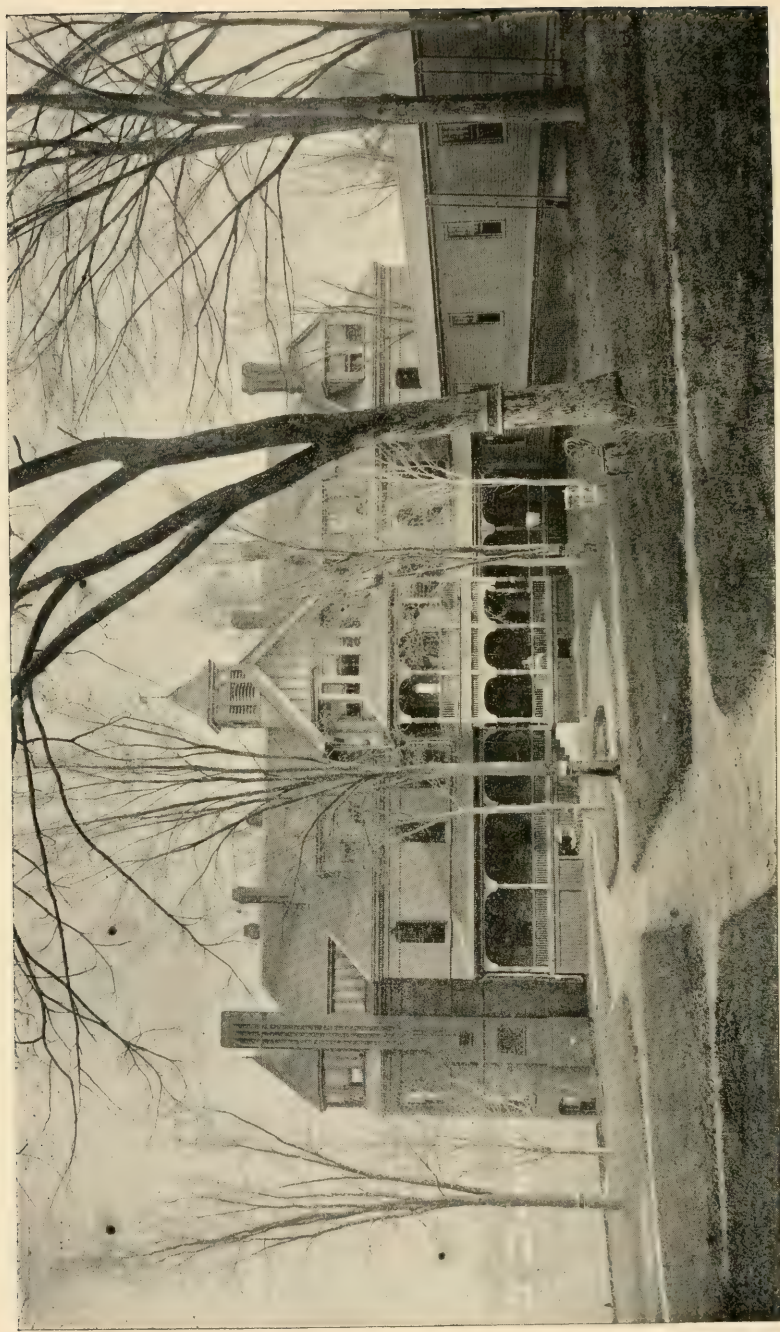


NEW HAMPSHIRE ASYLUM FOR THE INSANE.

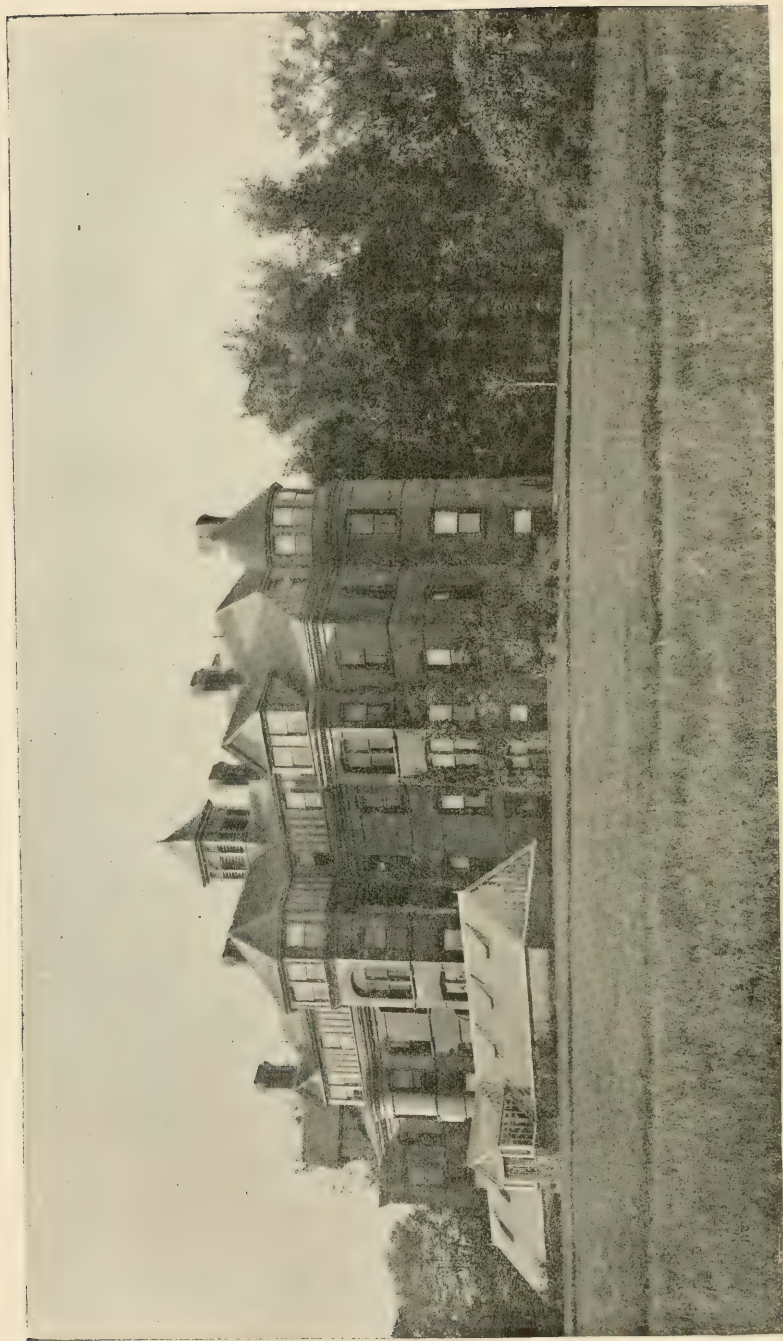
BANCROFT BUILDING.



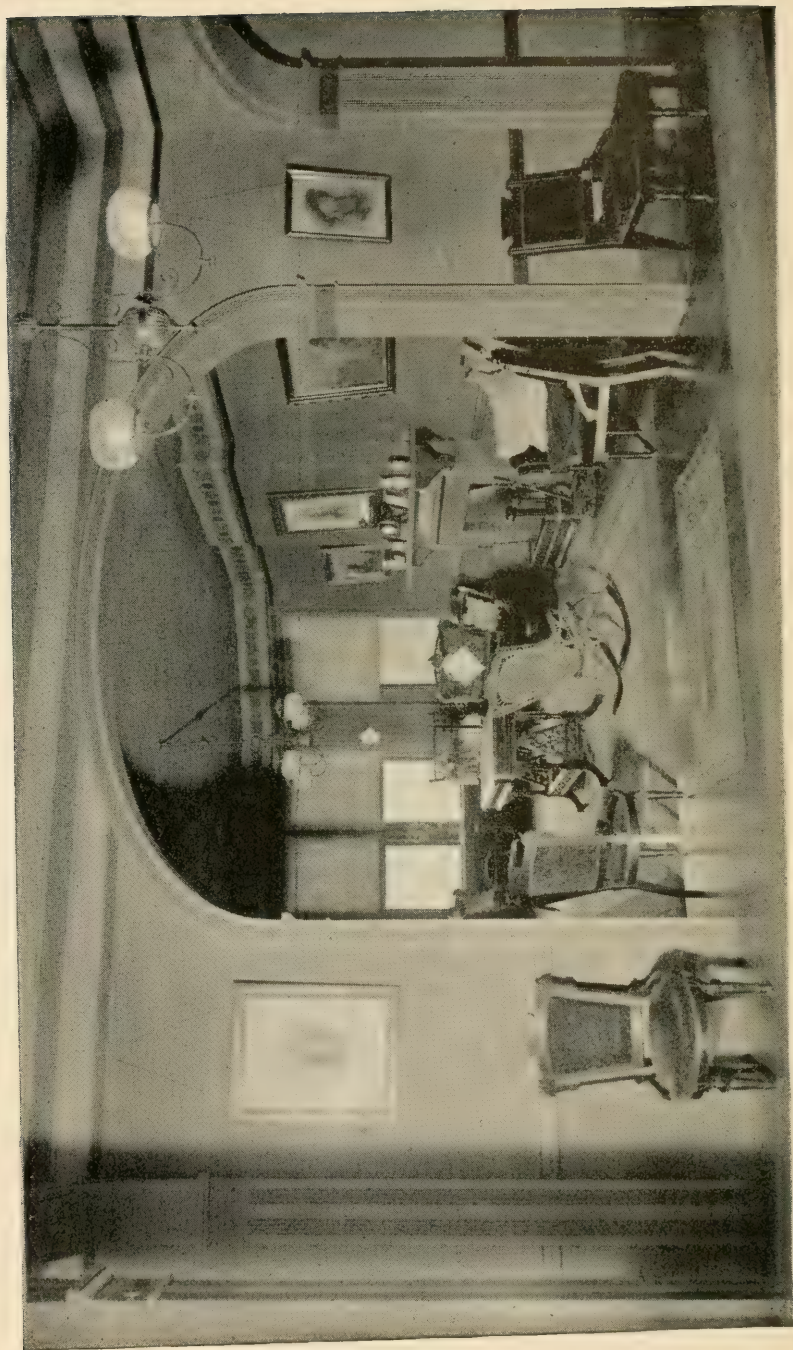
Hand & Taylor, Architects, Boston Mass.



BANCROFT BUILDING.— FROM THE NORTH.

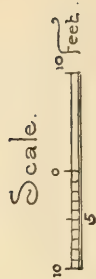
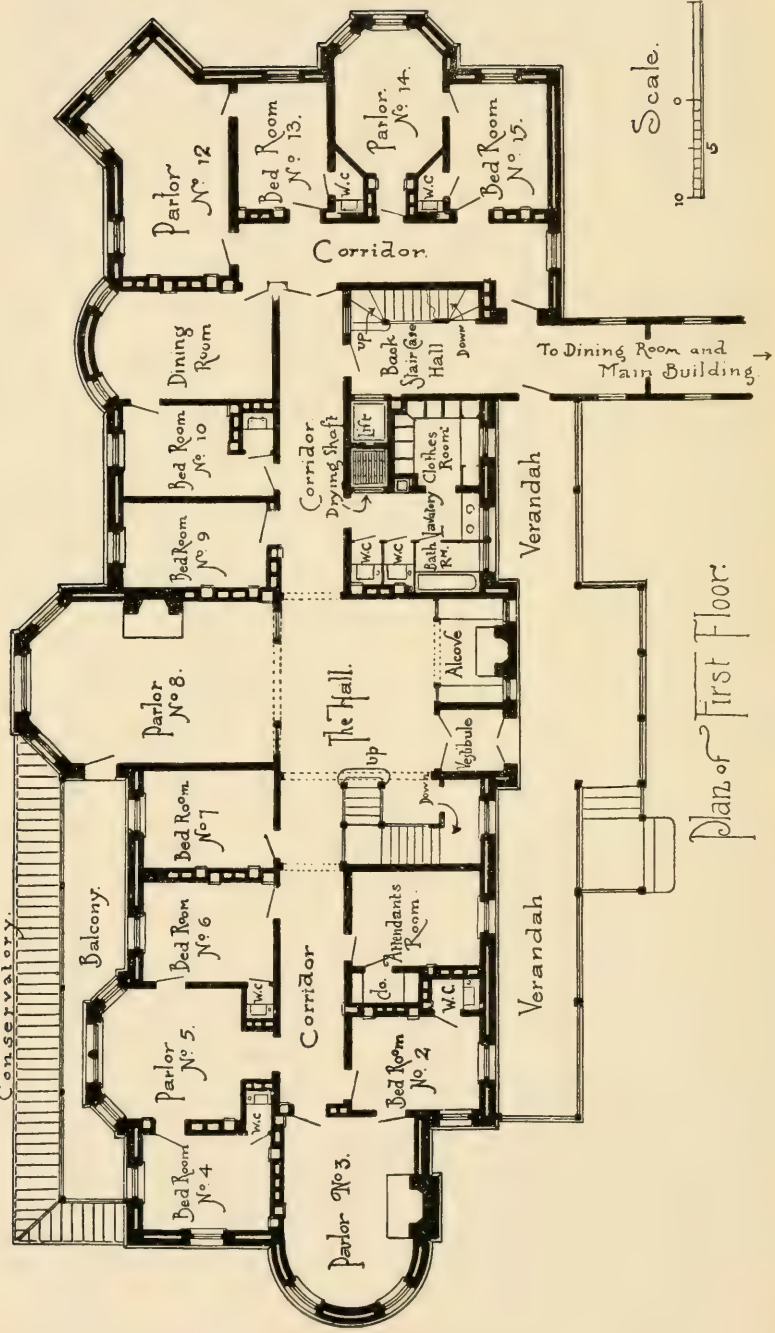


BANCROFT BUILDING.—FROM THE SOUTH.



BANCROFT BUILDING. — INTERIOR.

Conservatory.



Plan of First Floor.

ANNUAL REPORTS

OF THE

BOARD OF VISITORS, TRUSTEES, SUPERINTENDENT,
TREASURER, AND FINANCIAL AGENT

OF THE

NEW HAMPSHIRE

ASYLUM FOR THE INSANE

TO THE

GOVERNOR AND COUNCIL,

NOVEMBER, 1892.

VOLUME I, PART III.

CONCORD:

IRA C. EVANS, PUBLIC PRINTER.

1892.

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OFFICERS OF THE INSTITUTION.

BOARD OF VISITORS.

(EX OFFICIO.)

HIS EXCELLENCY HIRAM A. TUTTLE.

HON. JAMES FARRINGTON,

HON. HENRY B. QUINBY,

HON. GEORGE A. RAMSDELL,

HON. JOHN M. WHIPPLE,

HON. EDWIN C. LEWIS,

} *Councilors.*

HON. JOHN McLANE, *President of the Senate.*

HON. FRANK G. CLARKE, *Speaker of the House of Representatives.*

BOARD OF TRUSTEES.

GEORGE B. TWITCHELL, M. D., *President, Keene.*

JOSEPH B. WALKER, *Secretary, Concord.*

DEXTER RICHARDS, *Newport.*

WILLIAM G. PERRY, M. D., *Exeter.*

C. P. FROST, M. D., *Hanover.*

FRANKLIN D. AYER, D. D., *Concord.*

REV. J. E. BARRY, *Concord.*

ELLERY A. HIBBARD, *Laconia.*

JOHN C. FRENCH, *Manchester.*

MORRIS CHRISTIE, M. D., *Antrim.*

EDWARD SPALDING, M. D., *Nashua.*

CHARLES A. TUFTS, M. D., *Dover.*

RESIDENT OFFICERS.

C. P. BANCROFT, M. D. . . . *Superintendent.*
EDWARD FRENCH, M. D. *First Assistant Physician.*
A. C. NASON, M. D. *Second Assistant Physician.*
MR. J. H. CARR . . . *Clerk and Steward.*
MRS. FANNY B. CARR . . . *Housekeeper.*

VISITING COMMITTEE FOR 1892-93.

FIRST HALF OF MONTHS.

Nov.,	1892.	DR. CHARLES A. TUFTS.
Dec.,		E. A. HIBBARD.
Jan.,	1893.	DEXTER RICHARDS.
Feb.,		REV. F. D. AYER.
March,		DR. MORRIS CHRISTIE.
April,		DR. GEORGE B. TWITCHELL.
May,		JOHN C. FRENCH.
June,		DR. C. P. FROST.
July,		DR. W. G. PERRY.
Aug.,		DR. GEORGE B. TWITCHELL.
Sept.,		DR. CHARLES A. TUFTS.
Oct.,		J. B. WALKER.

SECOND HALF OF MONTHS.

Nov.,	1892.	WHOLE BOARD OF TRUSTEES.
Dec.,		REV. F. D. AYER.
Jan.,	1893.	DR. C. P. FROST.
Feb.,		DR. E. SPALDING.
March,		DR. WM. G. PERRY.
April,		DEXTER RICHARDS.
May,		DR. E. SPALDING.
June,		E. A. HIBBARD.
July,		J. B. WALKER.
Aug.,		REV. J. E. BARRY.
Sept.,		JOHN C. FRENCH.
Oct.,		REV. J. E. BARRY.

REPORT OF THE BOARD OF VISITORS.

STATE OF NEW HAMPSHIRE.

EXECUTIVE DEPARTMENT.

CONCORD, November 20, 1892.

The Governor and Council, President of the Senate, and Speaker of the House, a board of visitors of the New Hampshire Asylum for the Insane, having visited the asylum as required by law, are of the opinion that the design of the institution is carried into full effect by the present able and judicious management.

HIRAM A. TUTTLE, *Governor.*

JAMES FARRINGTON,

HENRY B. QUINBY,

GEORGE A. RAMSDELL,

JOHN M. WHIPPLE,

EDWIN C. LEWIS,

Councilors.

JOHN McLANE,

President of the Senate.

FRANK G. CLARKE,

Speaker of the House of Representatives.

REPORT OF THE TRUSTEES.

To His Excellency the Governor and to the Honorable Council:

The trustees of the New Hampshire Asylum for the Insane present this, their

FIFTIETH ANNUAL REPORT.

On the 28th day of last October, this institution completed a period of fifty years of active effort in behalf of the insane. It may be fit that we advert very briefly to a few of the more salient passages in its history, and see if it has accomplished the work anticipated by its founders and early friends.

The first patient was admitted on the 28th day of October, 1842. From thence, onward to May 31, 1843, a period of seven months, seventy-five others were received, thirty-eight of whom were males and thirty-seven females. These came in from time to time and, as Dr. Chandler, the superintendent, remarked to the trustees, "as fast as we have been prepared to receive them."

The whole number received, during this first half-century of the asylum's existence, has been five thousand nine hundred and forty-three (5,943). Of these, three thousand and forty-six (3,046) have been males, and two thousand eight hundred and ninety-seven

(2,897) females, showing a preponderance of one hundred and forty-nine (149) of the former over the latter sex.

It appears, moreover, that the recoveries and improvements have been seventeen and three fifths and twenty-four and four fifths per cent, respectively, of the whole number of each sex admitted. It must be remembered, however, that these percentages should be slightly reduced, as some patients have been treated more than once, and their admissions and discharges more than once entered in the asylum records. But the number is so small that the figures just given are very nearly correct.

Besides, a very large number, whose mental condition was past improvement when received, have found here a quiet home and all the comforts which their malady permitted. That the simple humane work, omitting all mention of the curative work of the asylum, accomplished during the last fifty years, has far more than paid for its entire cost, must be apparent to all persons conversant with the condition of the insane in this State before the asylum was erected.

The number which has been under treatment the past year has been five hundred and thirty-one (531). Of these, thirty-nine (39) have been discharged as improved in mental health, and fifty-one (51) as recovered; while three hundred and fifty-nine (359) are present inmates of the institution.

Two members of our Board have died since our last report, viz.: Dr. William Henry Harrison Mason, on the 29th day of January, and Col. Waterman Smith, on the 5th day of August of the present year. Both had rendered long and valuable service to the institution, the former having received his first appointment April 26, 1883, and the latter July 1, 1868. Both were

men of commanding stature and marked presence. Both were men of influence and widely known in the State, and were of about the same age.

Dr. Mason, at the time of his death, had been a member of the Board for nearly ten years, his first appointment bearing the date of April 26, 1883. He was a native of Gilford and was born on the 14th day of December, 1817. After receiving a pretty broad academical education, he commenced the study of medicine with Dr. Andrew McFarland, the second superintendent of this institution, then in practice at Sandwich. He subsequently entered the Dartmouth Medical School, from which he was graduated in 1840.

Two years afterwards, he entered upon the practice of his profession at Moultonborough, and there continued in the same for a period of fifty years. His business was extensive and owing to the sparseness of the population, often required long and fatiguing journeys to and from the residences of his patients. But, possessed of a cheerful spirit, firm health, and great physical endurance, he accomplished, apparently with little inconvenience, an amount of hard work which the modern practitioner would hardly crave. Well educated in his profession, possessing good judgment and extensive experience in medicine and surgery both, enterprising and conscientious, he became a most highly esteemed member of his profession.

But the public made other than medical demands upon him. Having landed property and interested in agriculture, he was called to a service of ten years upon the New Hampshire Board of Agriculture, and, as a member of that organization, delivered able addresses upon husbandry in different sections of the State. He was a member of the New Hampshire House of Rep-

representatives in 1859, 1860, and 1869, of the Senate in 1864 and 1865, and of the Constitutional Convention of 1876. He also held the office of tax commissioner in 1878 and of cattle commissioner in 1887.

Dr. Mason was twice married: first to Mehitable, daughter of Simon Moulton, and secondly to Sarah J., daughter of John G. Brown, who has died since the decease of her husband. Dr. Mason was a typical New Hampshire man of high character, reared under the influence of its best traditions and developed under the exigencies of its daily life.

Col. Waterman Smith was born of Quaker parentage at Smithfield, R. I., July 16, 1816. He spent some of his early years upon his father's farm. After receiving a common school and academical education, he learned the trade of a machinist. Having followed this for some ten years, he became a mill superintendent, first of the Slater mills, of Thompson, R. I., and subsequently, for six years, of the John L. Hughes mills of Philadelphia. In 1853, he became identified with the Manchester mills and Print works and continued his connection therewith until 1871, when he resigned his position and spent a year or thereabouts in foreign travel.

Upon returning to Manchester, he gave his attention to the management of his private estate. He sought the improvement of his farm in the southerly part of Manchester by irrigation, and with encouraging success. He was connected for many years with one or more of the banking institutions of the city, and was ever an earnest business man. He was also interested in educational matters and from 1860 to 1867 was chairman of the local board of education.

He held decided opinions upon the current topics of

his time and had the courage to express his views on all proper occasions. He was a member of the New Hampshire House of Representatives of 1881-1883. He was fond of agriculture, firmly attached to his adopted city and a good friend of this asylum of whose Board of Trustees he was for nearly fourteen years a valuable member. His death was so sudden that the report came to most persons simultaneously with that of his illness.

The asylum is a public, semi-charitable institution and not one designed for the acquisition and division of profits among private shareholders. Its object has had the sympathy of many benevolent persons, some of whom have manifested it by important gifts and legacies. In most cases, no particular directions have accompanied these, and in the earlier days of the institution, portions of some of them were expended in the construction or furnishing of new buildings.

This course was subsequently deemed unwise and unjust to the donors, and the trustees ordered all funds which had in any degree been impaired to be restored to their full amounts, from accruing income, and forever after maintained thereat. This has been done in most instances, and, during the ensuing year, the asylum will be able to place every one of them upon its books at its original amount, less than a thousand dollars being now required to accomplish this purpose.

The By-Laws governing the managing and investment of these funds are as follows :

SECTION 21. All funds amounting to one hundred dollars and upwards, which have heretofore been or which may hereafter be given to the New Hampshire Asylum for the Insane, shall, unless otherwise ordered by the donors, be entered upon the books of the financial agent as permanent funds, with the surnames of the donors attached

to each, and be forever kept intact. The income of each shall be expended from time to time in accordance with the conditions upon which it was given, or, in the absence of conditions, in such manner as the trustees shall deem for the highest interest of the asylum and its patients.

SECT. 22. There shall be chosen, by ballot, a financial agent, who shall have charge of the permanent funds of the asylum, shall collect, and, under the advice of the finance committee, from time to time invest, manage, and disburse any moneys arising therefrom. He shall be, *ex officio*, a member of the finance committee, shall give a satisfactory bond for the faithful performance of his trust in the sum of twenty-five thousand dollars, and continue in office until his successor is elected. He shall receive for his services such compensation as the trustees shall from time to time determine, and make up his accounts to the thirtieth day of September, inclusive, of each year.

SECT. 23. The trustees shall annually choose two from their board, who, with the financial agent, shall constitute a finance committee, and have general supervision and control of the funds of the asylum, with power to sell and transfer any stocks, bonds, and other securities belonging to said funds, whenever, in their judgment, it may be expedient to do so.

These funds, amounting now to two hundred and seventy-seven thousand seven hundred and eleven dollars and thirty-five cents (\$277,711.35), will be increased by a legacy of fifteen thousand dollars (\$15,000), becoming due about the first of January next, from the estate of the late Abigail B. Walker, of Concord.

The asylum buildings which have been erected, from time to time, as the necessities of the institution required, have been mostly paid for by the State. The appropriations made therefor, since the establishment of the asylum, amount to two hundred and thirty-three thousand dollars.

The land about the asylum, amounting to about one hundred and twenty-five acres, situated in the very heart of the state capital, and now of great value, has

been acquired at no expense to the State. With the exception of a few small sections, purchased and paid for from the income of the permanent funds, this whole tract was a gift to the asylum from the town of Concord, fifty years ago.

As we review the action of the State with reference to the asylum from a philanthropic point of view, it demands the highest approbation. When we look at it from a financial standpoint, the investment in this institution must be regarded as a sagacious and profitable one.

Since our last report, the asylum has enlarged its former area of land at Long Pond, by the purchase of an addition of about twenty-five acres. Our present tract has a long frontage on the shore of the pond, and on the west, another, abutting on the public highway. The whole of it slopes eastward with varying inclinations. Through both the northern and middle sections of it runs a brook of clear water from the high lands lying to the westward. The former of these already furnishes water at the buildings and the latter can easily be conducted to some of the lower portions of the grounds. These brooks are reliable at all times except for a month or two in summer. Near the house, the asylum has a never-failing spring of purest, potable water. These, supplemented as needed by the windmill, afford a most abundant supply of water at all seasons of the year.

Hitherto, access to this territory has been had by surmounting the long and steep hills over which the highway runs. During the past season, however, a nearly level and shorter approach has been secured by the construction of a private road through our own grounds. This, made possible by the last purchase, before alluded

to, follows the curvatures of the hillsides and affords fine views of the pond, of the farms sloping to it, and of the distant hills and mountains, even to the horizon's rim.

The landscape capacities of these grounds are very great, and, as little by little, they are more and more fully developed, will be found to have an attractiveness equaled only by their salubrity.

During the last season, the superintendent has committed the immediate care of the cottage and its grounds to Mr. and Mrs. Asbury F. Tandy. One of the physicians of the asylum has visited it every day and passed the night there. Great commendation is due Mr. and Mrs. Tandy for the kindness and skill exercised by them in the care of the patients, and for their constant efforts to render comfortable and attractive the house and grounds of this summer sanitarium.

The past season's experience has more fully confirmed the importance, at this locality, of another cottage for male patients. A short residence here is of as much value to them as to the female patients, for whose accommodation the present structure was built. At present, having but one, it has been necessary to divide the time of its occupancy between the two.

During the season last past, a family of men were taken there on the 16th of April. They occupied the house until the first day of July, when, upon surrendering it to a family of women, they removed to improvised quarters in which they were made comfortable until the 12th of September. Then, upon the return of the female patients to the asylum, they came back to the cottage and remained there until the 9th of November, when it was closed for the season.

Owing to its sheltered position and southeastern expos-

ure, this summer residence is comfortable for six or seven months of the year.

The trustees, having carefully considered the advisability of introducing electricity as a lighting agent into the asylum, have reached the conclusion that it will be well to do so.

Its use will be safer than that of gas. The great number of lights required, surrounded as they are by patients, many of whom are irresponsible, leads to more or less danger of fire, notwithstanding constant watchfulness on the part of faithful attendants.

Electric lamps radiate little or no heat, a matter of considerable consequence to the comfort of our patients during the warm season of the year.

The purity of the air of the rooms and halls when lighted by electricity is more easily preserved than when, as now, they are lighted by gas.

In short, these three considerations of safety, absence of objectionable heat, and the easy maintenance of atmospheric purity have led to the conclusion expressed above. The cost of wiring the house and of the necessary fixtures required, will, from the best estimate we have thus far obtained, be about two thousand dollars. For this, in the event of its introduction, the asylum will be constrained to appeal to the State, as its own means will not warrant the outlay.

The classification of patients on the men's side of the asylum is less perfect than upon that devoted to women. It must continue such, until a new building, of a similar design to that of the Bancroft building, is provided. The need of such a structure has been felt for many years, and its erection was earnestly recommended by our former superintendent, Dr. J. P. Bancroft, who had experienced the great need of it during his administration.

A building of this character, with accommodations for fifteen or twenty patients, would suffice for present needs. If so located and constructed as to admit of future enlargement, a building of this capacity would suffice for some years. Its cost would be from fifteen to twenty thousand dollars. We respectfully commend to the consideration of the executive and legislative departments of the state government the making of such an appropriation as will secure the introduction of electricity and the desired balance of the house, thereby according to male patients as full accommodations as are now afforded to those of the opposite sex.

The enlargement of the barn, for which provision was made by the Legislature, at its last session, has been completed. This secures room for the increased number of cows called for, and the storage of ensilage and other crops. The farm buildings are now convenient, sufficient, and in good condition. The accompanying report of the farm superintendent gives a succinct and correct account of the milk produced on the farm.

The importance of having the engineer at all times in proximity to his work has for a long time been felt, and, during the last season, a cottage for his occupancy has been erected on a spot a few rods north of the boiler house. The cost of this has been seventeen hundred and seven dollars and ten cents, as may be seen upon examination of the accompanying report of the building committee.

For statements in detail of the condition of the asylum, its treasury, and its permanent funds, you are respectfully referred to the several reports of the superintendent, treasurer, and financial agent, herewith submitted.

Even a cursory review of the asylum's history for the

last fifty years, establishes many important facts. Prominent among them are :

1. That the asylum has been a means of greatly improving the condition of the insane in New Hampshire.

2. That while the number of insane persons has increased with the increase of population, the accommodations for their treatment have kept pace with it.

3. That while the State has contributed liberally for the proper care of its insane, private benevolence has kept even with it in the promotion of this important work.

4. That this asylum has ever kept itself abreast of its age in the adoption of the most approved methods of asylum treatment, the wisdom of which course has been confirmed by its success.

It is hoped that the success of the past fifty years may be even greater in the years that are to follow.

GEORGE B. TWITCHELL,
WILLIAM G. PERRY,
CHARLES A. TUFTS,
EDWARD SPALDING,
JOHN E. BARRY,
FRANKLIN D. AYER,
DEXTER RICHARDS,
ELLERY A. HIBBARD,
CARLTON P. FROST,
MORRIS CHRISTIE,
JOHN C. FRENCH,
JOSEPH B. WALKER,

Trustees.

CONCORD, Nov. 17, 1892.

REPORT OF THE SUPERINTENDENT.

The superintendent respectfully submits the fiftieth annual report of the asylum for the year ending September 30, 1892.

The year commenced with three hundred and seventy-two patients — one hundred and eighty-six men, and one hundred and eighty-six women.

The number admitted during the year was one hundred and sixty-nine — eighty men and eighty-nine women.

The number of different persons under treatment during the year was five hundred and thirty-one — two hundred and sixty-two men, and two hundred and sixty-nine women.

The mortality rate for the year was 7.9 per cent. The general health of the house has been excellent.

The percentage of recoveries based upon the number of cases admitted and excluding all recoveries from opium or alcohol habits, is 23.72 per cent. In commenting upon the small percentage of recoveries it is necessary to bear in mind the fact that a large proportion of the cases admitted belonged to the chronic and incurable class. Many were advanced in years, and many either had a vicious heredity or were suffering from actual structural brain disease.

Thirty-nine cases were discharged as “improved” and “much improved.” Many of these, although they

cannot be called recovered, are still placed in such a secure state of mental health as to be able to have their liberty with their friends and relatives and to be of some use to themselves and their families.

Eleven men have been discharged as recovered from alcoholic insanity, their cases are not included, however, among the recoveries from insanity.

The lunacy law in New Hampshire went into operation nearly three years ago. A final amendment which took effect on January 1, 1892, gave the Board of Lunacy power to commit to the asylum any deserving resident of the State for remedial treatment. Under the present law, therefore, the State claims the right of supervision over all insane persons within its limits, and also possesses the authority to discharge any such person from custody if there is no further need of detention, and signifies its willingness to defray all expenses of remedial treatment in such deserving cases as the Board of Lunacy may send to the asylum. This law is eminently just and beneficent and reflects credit upon those who enacted it. It is just, because experience both in our own and other countries has led to the conviction that the insane are deserving of the strong protecting arm of the State both for treatment as well as for the preservation of their legal rights. It is beneficent, in that the State itself willingly agrees to pay all the expenses of treatment in those cases who have the terrible affliction of insanity added to that of poverty. This may mean life, hope, everything in fact to some who are struggling under burdens almost too great to bear, and who see pauperism and absolute dependence staring them in the face.

Under this new law the asylum becomes, therefore, *the* remedial insane hospital of the State. While a

majority of its resident patients are incurable by the very nature of their malady, many others are continually coming and going whose cases offer every prospect of amelioration or cure. It is very important then that this institution, selected by the State as its only remedial asylum, should be well equipped with every agency that experience or science has shown to be valuable in the treatment of insanity. Every reasonable expense should be incurred that will facilitate restoration to mental health.

In the hospital care of insanity needless or extravagant expenditure ought not to be countenanced, but it is a misfortune when measures that are really necessary for the rational treatment of insanity, are hampered for want of means. A false spirit of economy often prevails by reason of general misinformation and lack of interest in the subject. Even in this enlightened day, surprising ignorance prevails in regard to the nature of insanity, its proper management and treatment. In the public mind insanity too often means chronic dementia with total loss of the higher intellectual faculties, or the restless agitation and excitement of mania. Herein lies the great popular misconception of the disease. Insanity as a whole is misjudged by an observation of the symptoms of one or two of its varieties. As a matter of fact, insanity may exist with only the most partial perversion of the higher intelligence. The individual who may be incapacitated by reason of his mental disturbance from attending to business or the ordinary affairs of life, may still be in many respects intellectually clear and, while needing hospital restraint and treatment, be still as appreciative as ever of all that goes to make life enjoyable and worth living.

One of the very first requirements in hospital con-

struction for the insane is suitable provision for classification. Especially since the passage of the new law do we feel the need of a building for men corresponding to the Bancroft building for women. This latter structure has long since passed beyond the experimental stage. Its pleasant sunny parlors, cosy corners, and cheerful homelike appearance have proved a boon to many who have never ceased to testify to its good influence at a time when they most needed just such surroundings. It is equally obvious that such a house, smaller, but preserving the essential habiliments of the private house and the home, under the care of a man and his wife, would be of inestimable service in the proper classification and treatment of certain classes of men patients. In such a building, where the quiet, comfortable home life could be realized, many a convalescent would be hastened toward more complete recovery, and other cases could be cared for whose sensitive nervous organizations recoil from the larger and more promiscuous associations of the asylum ward.

A building to accommodate from fifteen to twenty men would be amply large. The expense of such a structure ought not to be over \$20,000. It should be detached from the main building, and yet connected with the latter by a corridor through which communication with the kitchen, offices, and chapel would be easy. Such a building ought to be constructed with sufficient elasticity so that within its walls the man of means, of education, and refinement may find exactly the surroundings and the atmosphere to which he has been accustomed. With such a structure in addition to those already built, no case throughout our State need go out of the State for medical treatment. Without it we are obliged to admit too often that we do not possess the

proper accommodations for this or that male patient, who, though anxious to gain admittance, still finds that he must go elsewhere to secure what he ought to obtain here.

It is unfortunate that the more rational treatment of mental disease at the present time is embarrassed by the prejudices and superstitions of the past which still have a firm hold upon the popular mind. The asylum is too often regarded as a cruel house of detention where pandemonium reigns and where but little is attempted in the way of intelligent treatment. Many people express surprise when they observe what is really being done for the insane and become more familiar with the modern hospital treatment of the disease. The public ignorance of the nature of insanity and particularly the popular prejudice against asylums, although not so widespread and deep-seated as formerly, still exists, and to a certain extent is unavoidable. In the first place, the disease itself tends to mystify and perplex the lay mind, and secondly, the prejudices of the insane, often one of the results of the disease, are communicated to others and exert quite a wide-spread influence. It is indeed quite natural that the perversity, the strange change in disposition, the acuteness of certain faculties and the blunting of others, the morbid actions, the hallucinations of special sense and the remarkable delusions of the insane should bewilder those who have had no experience with the disease. Too many people believe that there must be little or no help for any diseased condition as bewildering in its symptomatology as insanity and which has so little in common with ordinary sickness. Any attempt to ameliorate the condition of the insane, to improve the methods of treatment often encounters prejudice arising from misinformation, or from

a misconception of the real nature of the disease. It is gratifying to know, however, that there is a steady improvement in the general intelligence concerning insanity. Better classification of the insane in asylums, a more rational moral and medicinal treatment is exerting a beneficent influence upon the community as well as upon the insane. The same liberal spirit ought to prevail for the thorough treatment of mental disease that finds expression in the fine hospitals for general disease that exist in large and small towns throughout the country. The erection of suitable buildings for classification, providing more perfect facilities for individualizing the treatment of cases, and last but by no means least, the training and securing of competent nurses and attendants for the insane all demand increased expenditure. It is obvious that any institution which attempts the remedial care of the insane must incur more expense than one that merely houses and feeds its patients.

LIGHTING BY ELECTRICITY.

It would seem that the time has come when lighting by electricity should be introduced into the asylum. For the present it may be as well to purchase the electricity from one of the already existing companies in Concord. However that may be, the first step toward its introduction is the proper wiring of the institution. I trust that at the annual meeting in November the matter may receive your earnest consideration, and that a legislative appropriation may be solicited for the purpose. It is almost needless to enumerate the advantages of incandescent lighting in a hospital for the insane. First and foremost is the element of safety. The presence of large numbers of gas flames throughout an institution of this kind is a constant source of danger.

During the history of the asylum several small conflagrations of towels, beds, and the like, have been caused by some insane person mischievously playing with the gas jets. Only the timely interference of attendants has prevented serious consequences. A second argument in favor of incandescent lighting is the fact that it gives out little heat and does not vitiate the air. In a hospital for the insane every means should be considered that will secure pure air as an agency of health, treatment, and comfort. The danger from gas escaping from fixtures that have been tampered with, the ease with which electricity can be controlled in different portions of the house from one or more central stations, and the facility with which it may be conducted into closets and out-of-the-way places where lights are occasionally needed are all arguments in its favor. By judicious wiring and careful control, it is quite likely that a vastly better light may be secured for the same if not for a lower price than has been paid for gas in years past.

TRAINING SCHOOL FOR NURSES.

The third class in the training school graduated last June. The exercises were held in the chapel, Rev. D. C. Roberts delivered the graduating address. The class comprised the following members: Misses Adelaide G. Waters, Etta E. Cook, Jessie B. Lang, Elizabeth Ackland, and Mary A. Kinreade, all of whom graduated with success after passing through two years' active service and receiving the required instruction. Of these, three remain in the service of the asylum. It is gratifying to review the work that has been accomplished by the school during its first three years. All the graduates who have remained in hospital work, or



WALKER SUMMER COTTAGE.

who have taken up various branches of nursing have demonstrated their fitness for their chosen work and by their success have shown the special advantage of training and intelligence in nursing. During the three years, twenty-three have graduated. Out of this number eight still remain in the service of the asylum holding responsible positions as head nurses or night nurses, one of the number taking the important position of superintendent of the training school, made vacant by the resignation of Miss Brown. Two others have been called to assume supervisorships in a large insane hospital in an adjoining State. The demand for trained nurses is such that all who have graduated from the school have quickly found positions either in our own or in other hospitals, or as private nurses for physicians in general practice. And it is especially gratifying to receive from physicians and patients testimony of their capability and fitness for the work. In the appendix will be found a statement of requirements for those entering the school, as well as a list of all graduates, and the excellent address of Rev. D. C. Roberts delivered to the last graduating class.

THE WALKER SUMMER COTTAGE.

Early in the spring the Walker cottage was opened and occupied by twelve male patients under the general care of a man and his wife. During the period between the tenth of April, when the house was opened, and the first of July the grounds were greatly improved. A new barn was built for the future storage of hay, housing of wagons and carts, and keeping of oxen and cows. A nursery of fruit trees and small fruits was planted and much new ground broken up and cleared of stones and

bushes. In all these enterprises the men patients took a very active part with manifest benefit to themselves.

On the first of July the men were moved to comfortable quarters in the new barn building and the women occupied the cottage proper. Another year's experience has demonstrated the usefulness of this summer retreat as a means of treatment. Many patients were directly benefited by the change, some returning to their homes immediately from the cottage, and nearly all experienced the invigoration coming from change of scene and open-air life.

During the late summer months a fine new avenue was built from the cottage to the main highway at the head of the lake, thereby avoiding the tedious road on the high hills. This avenue will in the future form a very attractive feature in the grounds, winding as it does on a gentle grade around the hills about fifty feet above the lake. At one point it spans a little brook which rushes down through a woody ravine. The variety of scenery which may be opened up in future years on the grounds will prove of great remedial benefit to the patients who may spend the summer months at the Walker cottage.

Much grading has been done about the house, waste ground reclaimed, ornamental shrubbery planted, a rustic stone shelter erected over the spring, and finally, the ice house and woodshed moved back near the barns, thereby admitting of much improvement to the grounds immediately adjoining the house. Much credit is due Mr. Tandy and his wife who by their interest in the place and general faithfulness have rendered the work of the season so successful.

Another year it is to be hoped that the site selected by your committee for the erection of a house for men

may be graded and the general work of improvement and development of the grounds continued.

PERMANENT IMPROVEMENTS.

The improvements upon the barn and adjoining farm buildings, to which allusion was made in last year's report, have progressed through the year. They have been radical and comprehensive and will prove of great economic benefit to the institution. The addition of thirty feet to the barn was completed during the summer months. At the same time two large silos were built. The stalls for the cows were entirely torn out, new flooring, stanchions, feeding compartments with cement bottoms, were put in together with running water in the mangers, and what is perhaps of more importance than all the rest, wide, sliding windows in the rear of the cows, thereby admitting an abundance of fresh air and sunlight to the stalls. In the new piggery a fine cold storage room was provided for the preservation of meat. The meat is now all purchased by the side and quarter and cut up as required for the use of the house; and at the same time ample facility is furnished for cooling and keeping whatever pork and beef may be raised and slaughtered upon our own farm. To summarize then, the improvements upon the barn and addition to the farm buildings, for which a legislative appropriation was granted two years ago, comprised the erection of a piggery with slaughter house and cold storage; the addition of forty feet to the tool house for proper housing of farm wagons, sleds, and utensils; the addition of thirty feet to the barn with completion of two silos having a capacity of two hundred and eighty tons; a large vegetable cellar, and entire new stalls for the milch cows. A statement of the expenditures for

these improvements will be found in the appendix. As usual the completion of so many radical improvements exceeded the early estimate, and the balance was advanced by the treasurer from ordinary account.

The diet kitchen, to which allusion was made in the last report, was finished and fully equipped, and has proved a valuable adjunct to the course of instruction to nurses in the training school.

In the general kitchen the increase of population, together with the fact that much of the apparatus had become old, necessitated the purchase of much new material. A new seventy-five gallon coffee urn, a large new steamer, an entire new range, new potato and meat oven, new broiler and sinks comprised the changes made in this department. During the ensuing year it is to be hoped that a new cold storage, similar in design and construction to the one provided for the slaughter house may be built in the room adjoining the kitchen.

At your semi-annual meeting it was voted that a house for the engineer should be provided on the grounds, in order that he may reside on the place and be within easy reach. This house has been constructed in accordance with plans furnished by Mr. E. B. Hutchinson and will be occupied this fall by the engineer. The house is furnished with water from the asylum spring, and is connected with the city sewer. The necessary expenses for the completion of the house will be found in the appendix.

The usual weekly entertainments were kept up during the winter months. A fine new oxy-hydrogen stereopticon was purchased in the fall.



WALKER SUMMER COTTAGE AND LAKE PENACOOK.

ACKNOWLEDGMENTS.

During the year Mr. J. D. Donovan, who served in the capacity of engineer for twenty-three years, resigned his position. During his long service many very important changes were made in the boiler house, and in the heating and pumping apparatus. New and large pumps with sufficient capacity to meet the increased demand for water, entire new boilers, and a radical change from high to low pressure heating, are among the many changes that have been accomplished during this time. It was thought best in making a change of engineers to secure one who is a practical plumber as well as steam-fitter, and to have him a resident upon the grounds. Mr. Frederick Booth, of this city, was selected to fill this important position.

During the summer months Miss Arlie A. Brown, who has had a continuous service of twenty-eight years in this institution, resigned her position as superintendent of the training school and supervisoress in the women's department. It was with regret that Miss Brown's resignation was accepted. She had been eminently faithful and efficient in her department, and by her zeal and interest contributed much toward the successful establishment of the training school for nurses. She carries with her the best wishes of many friends at the asylum, including both past and present patients and employees. Mrs. M. C. Godfrey, a graduate of the first class of the training school, was secured to fill the position. She commenced her duties in August with an earnestness and faithfulness that indicate her adaptability for the work and success in the future.

The institution is under especial obligation to Drs. C. R. Walker, Julia Wallace Russell, and Geo. Cook for

courses of lectures delivered to the nurses in the training school.

Rev. James K. Ewer kindly gave a very interesting reminiscence, in the chapel, of army life and experience. Rev. Bradley Gilman, Mrs. Josiah Sanborn, and Mrs. S. C. Morrill contributed another evening entertainment, to all of whom the superintendent expresses the appreciation of many patients.

It is with deep regret that I refer to the loss by death of two members from your board, Dr. W. H. H. Mason and Hon. Waterman Smith. Dr. Mason, although connected with the asylum for only a few years, and in somewhat feeble health, expressed great interest in the welfare of the institution and its patients, and always stood ready to assist in any measure that might be indicated for the advancement of the better care and provision for the insane. Waterman Smith was a member of your board for many years, and always contributed from his large fund of practical common sense and business experience toward the advancement of the material prosperity of the institution.

To those faithful officers and employés who have tendered the institution and its patients their best services, the superintendent expresses his gratitude.

The following papers throughout the State have been gratuitously supplied the asylum during the past year: "Granite State News," "Manchester Weekly Union," "People and Patriot," "Concord Daily Monitor," "Nashua Gazette," "The Farmer's Cabinet," "Berlin Independent," "The Morning Star," "The New Hampshire Gazette," "The Mountaineer," "Cheshire Republican," "Sandwich Reporter," "The Analecta," "The Belknap Republican," "Carroll County Pioneer," "Manchester Weekly Budget," "Exeter Ga-

zette," "The Derry News," "The Merrimack Journal," "The Great Falls Free Press," "The Weekly Times," "Peterboro' Transcript," "The States and Union," "The Northern Herald." In no easier way can greater pleasure be conferred upon those who are obliged to remain in the asylum than by the sending of newspapers from different sections of the State.

As in years past the cordial coöperation of the members of the Board of Trustees have materially lightened the burden of the Superintendent, and is deeply appreciated by him.

C. P. BANCROFT,
Superintendent.

CONCORD, N. H., September 30, 1892.

STATISTICAL TABLES.

TABLE I.

	Men.	Women.	Total.
Patients in the hospital October 1, 1891.....	186	186	372
Cases admitted during the year.....	80	89	169
Discharged within the year.....	97	84	181
Viz., as recovered from first attack.....	14	13	27
as recovered from other than first.....	3	10	13
as recovered from alcoholism.....	11	...	11
as much improved.....	6	7	13
as improved.....	11	15	26
as not improved.....	22	18	40
as not insane.....	...	2	2
Eloped.....	6	1	7
Deaths.....	24	18	42
Patients remaining October 1, 1892.....	172	187	359
Number of different persons treated in the year.....	262	269	531
Number of different persons admitted.....	76	87	163
Number of different persons recovered.....	27	23	50
Daily average number of persons.....	181.40	182.38	363.78

TABLE II.

Showing the result in all under treatment during the year.

	Of those in the asylum at the beginning of the year.			Of those admit- ted during the year.			Total of both classes.		
	Men.	Women.	Total.	Men.	Women.	Total.	Men.	Women.	Total.
Discharged recovered..	8	13	21	9	10	19	17	23	40
" much improv'd	4	2	6	2	5	7	6	7	13
" improved.....	4	5	9	6	10	16	10	15	25
" not improved..	16	9	25	6	9	15	22	18	40
" alcoholism.....	3	...	3	8	...	8	11	...	11
" not insane.....	...	2	2	...	...	...	...	2	2
" eloped.....	3	1	4	3	...	3	6	1	7
Died.....	17	13	30	7	5	12	24	18	42
Remaining improved..	40	35	75	18	23	41	58	58	116
" not improved	90	102	192	24	26	50	114	128	242
" not insane...	...	...	...	...	1	1	...	1	1

TABLE III.

Admissions and discharges from the beginning of the asylum.

	Men.	Women.	Total.
Admitted.....	3,046	2,897	5,943
Discharged.....	2,787	2,612	5,399
" recovered.....	1,045	1,003	1,048
" improved.....	677	691	1,368
" not improved.....	592	532	1,124
Died.....	542	464	1,006

TABLE IV.

Showing number and character of those recovered during the year.

	Cases in which recurrency is established.			Cases in which recurrency is not established.			Total of both classes.		
	Men.	Women.	Total.	Men.	Women.	Total.	Men.	Women.	Total.
From first attack.....	..	..	..	12	14	26	12	14	26
" second ".....	..	..	..	12	1	3	12	1	3
" third ".....	..	..	..	12	12	4	12	12	4
" fourth ".....	..	12	12	..	..	..	..	12	12
" sixth ".....	..	1	1	..	..	..	..	1	1
" seventh ".....	..	1	1	..	..	..	..	1	1
" twelfth ".....	..	12	12	..	..	..	..	12	12
Unknown.....	1	..	1	..	..	..	1	..	1
	1	6	7	16	17	33	17	23	40

TABLE V.

Showing duration of insanity in those recovered during the year.

	Men.	Women.	Total.
Less than one month.....	5	3	8
One to three months.....	4	7	11
Three to four months.....	2	2	4
Six to twelve months.....	1	4	5
More than one year.....	3	4	7
Unknown.....	2	3	5
	17	23	40

TABLE VI.

Showing number of admissions to this asylum in those admitted during the year.

	Men.	Women.	Total.
Admitted the first time	64	67	131
" second	10	10	20
" third	4	4	8
" fourth .....	..	5	5
" fifth .....	..	1	1
" eighth .....	..	1	1
" ninth	1	..	1
" tenth	1	1	2
	80	89	169

TABLE VII.

Showing number of the attack in those admitted during the year.

	Men.	Women.	Total.
First	64	65	129
Second	4	12	16
Third	4	2	6
Fourth .....	..	3	3
Fifth .....	..	1	1
Sixth	1	..	1
Eighth .....	..	1	1
Tenth .....	..	1	1
Twelfth .....	..	2	2
Thirteenth .....	..	1	1
Not insane .....	..	1	1
Unknown	7	..	7
	80	89	169

TABLE VIII.

Showing duration of insanity in those admitted during the year.

	Men.	Women.	Total.
Less than one month	24	15	39
One to three months	8	18	26
Three to six months	6	12	18
Six to nine months	5	10	15
Nine to twelve months	1	..	1
Twelve to eighteen months	6	7	13
Eighteen months to two years	4	3	7
Two to three years	3	5	8
Three to four years	3	7	10
Five to ten years	4	5	9
Ten to fifteen years	3	1	4
Fifteen to twenty years .....	..	1	1
Twenty to thirty years .....	..	1	1
Thirty to forty years	1	..	1
Fifty to sixty years	1	..	1
Alcoholism	4	..	4
Not insane .....	..	1	1
Unknown	7	3	10
	80	89	169

TABLE IX.

Showing ages in those admitted during the year.

	Men.	Women.	Total.
15 to 20 years	4	4	8
20 to 25 years	13	7	20
25 to 30 years	6	5	11
30 to 35 years	5	13	18
35 to 40 years	11	14	25
40 to 45 years	11	9	20
45 to 50 years	4	10	14
50 to 60 years	10	15	25
60 to 70 years	6	7	13
70 to 80 years	8	5	13
Over 80 years	2	..	2
	80	89	169

TABLE X.

Showing form of disease in those admitted during the year.

	Men.	Women.	Total.
Acute mania	6	7	13
Sub-acute mania	9	14	23
Recurrent mania	1	5	6
Chronic mania .....	..	1	1
Circular mania .....	..	1	1
Epileptic mania .....	..	1	1
Senile mania .....	..	1	1
Acute melancholia	14	28	42
Sub-acute melancholia	2	3	5
Chronic melancholia .....	..	4	4
Recurrent melancholia .....	..	1	1
Melancholia with stupor	1	1	2
Primary dementia .....	..	1	1
Chronic dementia	5	6	11
Senile dementia	9	3	12
Structural brain disease .....	..	1	1
Imbecility	2	..	2
Hypochondria	4	1	5
Paresis	1	..	1
Adolescent insanity	4	3	7
Chronic delusional insanity	11	5	16
Alcoholism	11	..	11
Opium habit .....	..	1	1
Not insane .....	..	1	1
	80	89	169

TABLE XI.

Showing complications in those admitted during the year.

	Men.	Women.	Total.
Hereditary tendency to insanity	15	27	42
Alcoholic intemperance	21	3	24
Epilepsy	1	1	2
Opium habit	1	1	2
Syphilis	1	..	1
Phtthisis .....	..	1	1
Chorea	2	..	2
Hernia .....	..	1	1
Uterine diseases .....	..	3	3
Chronic catarrh of the middle ear .....	..	1	1
Sexual excesses	1	1	2
Asthma	1	1	2
	43	40	83

TABLE XII.

Showing number with suicidal propensity under treatment during the year.

	Men.	Women.	Total.
Of those in the asylum at the beginning of the year.....	30	24	54
Of those admitted during the year.....	29	53	82
	59	77	136

TABLE XIII.

Showing civil condition of those admitted during the year.

	Men.	Women.	Total.
Married.....	30	50	80
Single.....	41	20	61
Widowed.....	7	16	23
Divorced.....	1	3	4
Unknown.....	1	..	1
	80	89	169

TABLE XIV.

Showing occupations of those admitted during the year.

	Men.	Women.	Total.
Housewives .....	..	57	57
Laborers	19	..	19
Farmers	9	..	9
Mill operatives	7	7	14
Domestics .....	..	15	15
Shoe operatives	6	2	8
Merchants	4	..	4
Carpenters	3	..	3
Painters	3	..	3
Clerks	3	..	3
Tanners	2	..	2
Music teachers	2	..	2
Dressmakers .....	..	2	2
Bar-tenders	2	..	2
Stone masons	2	..	2
Hotel clerk	1	..	1
Chemist	1	..	1
Moulder	1	..	1
Students	2	1	3
Sailor	1	..	1
R. R. mechanic	1	..	1
Wheelwright	1	..	1
Boiler-maker	1	..	1
Blacksmith	1	..	1
Florist	1	..	1
School teacher .....	..	1	1
Teamster	1	..	1
Locomotive fireman	1	..	1
Shoe-dealer	1	..	1
Paper-hanger	1	..	1
None	3	4	7
	80	89	169

TABLE XV.

Showing nativity of those admitted during the year.

	Men.	Women.	Total.
New Hampshire	46	52	98
Maine	7	6	13
Massachusetts	5	5	10
Vermont	1	8	9
New York .....	..	4	4
Connecticut	2	..	2
Nebraska .....	..	1	1
Canada	6	3	9
Nova Scotia	2	..	2
P. E. Island .....	..	1	1
Ireland	6	4	10
England	1	2	3
Wales	1	..	1
Germany	1	1	2
Poland	1	..	1
Scotland .....	..	1	1
Norway .....	..	1	1
Unknown	1	..	1
	80	89	169

TABLE XVI.

Showing residence of those admitted during the year.

	Men.	Women.	Total.
Hillsborough County	16	23	39
Merrimack "	12	17	29
Cheshire "	11	10	21
Rockingham "	13	8	21
Strafford "	7	9	16
Grafton "	6	8	14
Belknap "	4	6	10
Coös "	3	4	7
Sullivan "	4	2	6
Connecticut	2	..	2
Vermont .....	..	1	1
Maine	1	..	1
Canada .....	..	1	1
Unknown	1	..	1
	80	89	169

TABLE XVII.

Showing by what authority committed.

	Men.	Women.	Total.
By friends.....	40	64	104
By state commissioners of lunacy.....	7	11	18
By counties.....	3	3	6
By towns or cities.....	22	6	28
By courts.....	3	2	5
By self.....	3	3	6
By order of the Governor.....	2	..	2
	80	89	169

TABLE XVIII.

Showing by whom supported.

	Men.	Women.	Total.
Self or friends.....	42	63	105
Counties.....	5	6	11
Towns or cities.....	21	7	28
State, including cases sent by the supreme court, by order of the Governor, and by the commis- sioners of lunacy.....	12	13	25
	80	89	169

TABLE XIX.

Deaths during the year and their causes.

	Men.	Women.	Total.
Structural disease of the brain.....	6	10	16
Exhaustion from acute melancholia.....	3	2	5
" " mania.....	1	1	2
" " chronic dementia.....	3	1	4
" " senile.....	5	..	5
Paresis.....	2	..	2
"La Grippe".....	2	1	3
Asthma complicated with capillary bronchitis...	..	1	1
Capillary bronchitis.....	1	..	1
Cholera morbus.....	..	1	1
Peritonitis.....	..	1	1
Suicide by hanging.....	1	..	1
	24	18	42

TABLE XX.

Showing ages at time of death.

	Men.	Women.	Total.
Between 30 and 40 years old.....	3	4	7
" 40 " 50 " ".....	4	2	6
" 50 " 60 " ".....	5	3	8
" 60 " 70 " ".....	4	3	7
" 70 " 80 " ".....	7	4	11
Over 80 years old.....	1	2	3
	24	18	42

TABLE XXI.

Showing ages of those remaining at the end of the year.

	Men.	Women.	Total.
Under 20 years of age.....	1	4	5
20 to 30 years old.....	24	12	36
30 " 40 " ".....	38	36	74
40 " 50 " ".....	35	45	80
50 " 60 " ".....	35	42	77
60 " 70 " ".....	19	28	47
70 " 80 " ".....	12	15	27
Over 80 years old.....	8	5	13
	172	187	359

TABLE XXII.

Showing duration of disease in those remaining at the end of the year.

	Men.	Women.	Total.
From 1 to 2 months.....	1	3	4
" 3 " 6 " ".....	2	6	8
" 6 " 12 " ".....	8	13	21
" 12 " 18 " ".....	7	9	16
" 18 months to 2 years.....	3	7	10
" 2 years to 3 years.....	10	11	21
" 3 " 5 " ".....	22	21	43
" 5 " 10 " ".....	24	27	51
" 10 " 15 " ".....	22	22	44
" 15 " 20 " ".....	13	22	35
" 20 " 25 " ".....	12	9	21
" 25 " 30 " ".....	12	9	21
" 30 " 40 " ".....	6	12	18
Over 40 years.....	5	7	12
Unknown.....	24	8	32
Opium habit.....	1	..	1
Not insane.....	..	1	1
	172	187	359

TABLE XXIII.

Showing prospect of recovery in those admitted during the year.

	Men.	Women.	Total.
Curable (apparently)	34	52	86
Incurable (apparently)	37	35	72
Alcoholism	9	..	9
Opium habit .....	..	1	1
Not insane .....	..	1	1
	80	89	169

TABLE XXIV.

Prospects of those remaining at the end of the year.

	Men.	Women.	Total.
Curable (apparently)	17	32	49
Incurable (apparently)	154	152	306
Opium habit	1	..	1
Not insane .....	..	1	1
	172	187	359

TABLE XXV.

Statistics of admissions, discharges, and deaths, from the opening of the asylum.

Year.	Admitted.	Discharged and died.	Recovered.	Improved.	Unimproved.	Died.	Whole number under treatment.	Remaining at end of hospital year.	Daily averages of the hospital.		
									Men.	Women.	Total.
1843	76	29	12	10	6	1	76	47	.....	.....	.....
1844	104	81	37	20	19	5	151	70	.....	.....	.....
1845	88	82	37	17	22	6	158	76	.....	.....	.....
1846	98	76	26	23	16	11	174	98	.....	.....	.....
1847	89	87	38	17	23	9	187	100	.....	.....	.....
1848	92	83	29	20	26	8	192	109	.....	.....	.....
1849	81	76	36	15	11	14	190	114	.....	.....	.....
1850	103	90	45	18	20	7	217	127	.....	.....	.....
1851	88	98	45	25	16	12	215	117	.....	.....	.....
1852	107	106	66	13	16	11	224	118	.....	.....	.....
1853	132	107	65	25	11	8	250	143	.....	.....	.....
1854	141	123	63	24	22	14	284	161	.....	.....	.....
1855	95	91	50	20	9	12	246	155	.....	.....	.....
1856	85	96	66	13	7	10	250	154	.....	.....	.....
1857	97	81	47	15	7	12	251	170	.....	.....	.....
1858	76	77	34	20	5	18	246	169	.....	.....	.....
1859	98	85	31	22	18	14	267	182	.....	.....	.....
1860	85	83	38	16	12	17	267	184	91.0	88.0	182.0
1861	106	94	34	34	10	16	290	196	90.0	100.0	190.0
1862	86	94	42	32	7	13	282	188	88.7	105.7	191.4
1863	101	85	30	32	17	16	289	204	87.4	105.9	193.3
1864	105	92	36	16	17	23	300	217	99.4	107.4	206.8
1865	107	102	42	23	14	22	324	223	102.5	115.9	218.4
1866	104	91	26	28	16	21	327	236	106.3	122.6	228.9
1867	117	107	39	24	27	17	353	246	119.3	122.6	241.9
1868	118	129	51	39	18	21	364	235	118.5	121.27	239.77
1869	95	93	42	20	9	22	330	237	113.7	129.9	243.6
1870	130	114	37	34	20	23	367	253	123.1	125.9	249.0
1871	135	163	65	37	29	32	388	225	119.8	123.44	242.82
1872	152	123	55	31	16	21	377	254	109.36	125.19	234.55
1873	194	172	61	51	27	33	448	273	127.8	139.5	267.3
1874	140	137	42	44	27	22	416	281	140.4	127.5	267.9
1875	120	140	53	37	30	20	401	261	136.6	138.1	274.7
1876	140	122	35	34	27	26	401	279	121.4	139.1	260.5
1877	119	118	36	38	27	17	398	280	124.2	150.3	274.5
1878	114	118	35	36	30	17	394	276	128.9	143.8	272.7
1879	73	81	27	23	8	23	349	268	126.3	143.8	270.1
1880	111	94	28	27	22	17	379	285	127.4	147.6	275.0
1881	134	117	33	39	23	22	419	302	133.3	158.6	291.9
1882	104	121	38	26	27	30	406	285	131.0	159.1	290.1
1883	133	123	41	23	34	25	418	295	120.3	164.1	284.4
1884	141	127	18	41	44	24	436	309	124.3	169.5	293.8
1885	138	122	30	20	36	36	447	322	128.3	181.9	310.2
1886	138	143	43	30	34	34	460	317	139.82	182.37	322.19
1887	143	128	32	28	28	33	460	328	137.22	184.12	321.34
1888	137	125	33	26	35	28	465	339	150.49	183.59	334.08
1889	155	158	41	38	34	36	494	337	161.06	175.80	336.86
1890	276	223	79	28	63	53	692	364	166.52	181.57	351.09
1891	173	165	42	40	37	38	527	372	175.62	181.90	360.61
1892	169	181	51	39	40	42	531	359	181.40	182.38	363.78

TREASURER'S REPORT.

To the Trustees of the New Hampshire Asylum for the Insane:

The following statement of receipts and expenditures, from October 1, 1891, to September 30, 1892, inclusive, is respectfully submitted.

RECEIPTS.

Balance on hand	\$134.12
Cash received for board of private patients	50,926.96
received for board of town patients .	3,772.73
received for board of county patients	6,502.42
received of financial agent for aid to patients	10,000.00
received of state treasurer for aid to indigent patients	6,000.00
received of state treasurer for board of criminal insane	4,341.61
received of state treasurer for board of patients transferred to state support by order of commissioners of lunacy	11,700.16
received of financial agent as income from Isaac Adams fund	180.00
received of financial agent for improvement of grounds	400.00
received of financial agent for barn improvements	300.00

Cash received of financial agent for construction of house for engineer .	\$853.65
received of state treasurer for barn improvements	3,000.00
received of state treasurer for library for present year and two years prior	300.00
received for stock and articles sold .	1,810.87
	<hr/>
	\$100,222.52

EXPENDITURES.

Cash paid for meats	\$10,174.41
flour	2,507.03
butter and cheese	3,071.88
sugar and molasses	1,547.86
fish	3,001.73
coffee and tea	1,710.58
fruit, potatoes, and other vegetables	547.09
all other table supplies	6,733.31
house furnishing goods	4,420.63
articles furnished and charged	3,273.02
lighting and heating	8,987.18
medical and surgical supplies	1,069.94
services of all forms in care of patients and household	24,811.19
ordinary repairs of buildings	5,532.59
permanent improvements, including all additions to and alterations upon farm buildings and construction of engineer's house	9,993.72
provender	1,989.35

Cash paid for farm expenses, including serv-	
ices, farming implements,	
and all improvements of	
farm and grounds . . .	\$5,387.27
stationery, library, printing,	
etc.	416.14
postage, express, and freights	549.04
traveling expenses of trus-	
tees	151.70
public exercises, including	
Sunday services, and all	
public means to interest	
and occupy patients . . .	1,175.87
miscellaneous items . . .	454.36
	<hr/>
Whole amount expended . . .	\$97,505.89
Balance of income carried to new account	2,716.63
	<hr/>
	\$100,222.52

C. P. BANCROFT,
Treasurer.

CONCORD, October 1, 1892.

I have examined the accounts of the treasurer of the New Hampshire Asylum for the Insane for the fiscal year ending September 30, 1892, and find them correct and sustained by the proper vouchers.

MORRIS CHRISTIE, *Auditor.*

ANTRIM, N. H., October 19, 1892.

REPORT OF BUILDING COMMITTEE

ON BARN IMPROVEMENTS AND ADDITIONS.

The committee for the expenditure of the state appropriation of \$8,000, made by the last Legislature, present the following report of their receipts and expenditures from January 1, 1891, to September 30, 1892. These have appeared in the treasurer's report for this and the preceding year but are itemized as follows :

RECEIPTS.

From state treasurer	\$8,000.00
treasurer of New Hampshire Asylum	
advanced from ordinary account	3,095.71
J. B. Walker, financial agent	300.00
	<hr/>
	\$11,395.71

EXPENDITURES.

Paid N. E. Granite Co., for stone foundation	\$39.00
Ola Anderson, for stone foundation	85.00
L. R. Fellows & Son, for work on cellar division wall and vegetable cellar	169.33
Brown's Lumber Co., for spruce frame and boards for silos and stalls	362.54
G. L. Theobald for excavating and grading	344.63

Paid E. B. Hutchinson, for erecting new piggery, slaughter, and cold storage house as per contract . . .	\$6,647.21
Peter Webster, for extending tool house as per contract . . .	800.00
F. W. Scott, for adding 30 feet to barn as per contract . . .	1,735.07
Foss & Merrill, for surveying . . .	10.50
Concord Foundry Co., for 80 iron pig troughs . . .	264.00
H. McAlpine, for painting roof . . .	98.97
Humphrey, Dodge & Co., for lead pipe . . .	24.57
Rice, Whitacre & Co., for steam boiler . . .	85.00
George P. Clark, for iron trucks . . .	4.78
Giles Wheeler, for architect's plans and supervision . . .	211.50
Fairbanks & Co., for abattoir scales . . .	60.00
J. Duncan & Co., for track for cold storage room . . .	53.09
Stevens & Duncklee, for soldering . . .	13.51
Chester D. Holmes for building cold storage room . . .	316.01
L. E. Glazier, for stanchions for stalls in cow barn . . .	39.00
Peter Daley, for stone foundation for run-way from cow barn to barnyard . . .	10.00
O. F. Braley, for sash for barn in rear of cow stalls . . .	22.00
	<hr/>
	\$11,395.71

There still remains to be done, the shingling of the roof of the old barn and sheds, and the laying of new flooring, and the building of new stalls for the farm horses. This can be done in the ensuing year at such time and with such means as the superintendent and

treasurer may have at his disposal. When all is completed your committee thinks that the farm buildings will be convenient, and as thoroughly sanitary as any in New England and will not require any further extension or alteration for many years.

C. P. BANCROFT,
J. B. WALKER,
WATERMAN SMITH,
Committee.

CHARLES P. BANCROFT, *Treasurer* NEW HAMPSHIRE
ASYLUM, *in account with* CONSTRUCTION OF
HOUSE FOR ENGINEER.

RECEIPTS.

From J. B. Walker, financial agent . . .	\$853.65
C. P. Bancroft, treasurer, advanced from ordinary account	820.15
	<hr/>
	\$1,673.80

EXPENDITURES.

Paid Chadwick Lead Works	\$71.40
Braman Dow & Co., gas pipe	9.72
George Woodman Co., plumbing stock	105.58
Bowker, Torrey & Co., marble slab	11.05
L. R. Fellows, for connecting house with city sewer	26.05
E. B. Hutchinson, for erecting house as per contract	1,450.00
	<hr/>
	\$1,673.80

J. B. WALKER,
C. P. BANCROFT,
Committee.

TWENTY-SIXTH ANNUAL REPORT OF THE FINANCIAL AGENT.

To the Trustees of the New Hampshire Asylum for the Insane:

The Financial Agent respectfully presents this report of his receipts and expenditures from October 1, 1891, to September 30, 1892, inclusive; and of the amounts and investments of the permanent funds in his custody at this date.

RECEIPTS.

Cash brought from last year's account	\$5,013.57
received, for bonds paid	17,200.00
“ “ interest and dividends	16,023.91
	\$38,237.48

EXPENDITURES.

Cash paid for securities purchased	\$14,684.14
Charles P. Bancroft, treasurer	10,970.00
insurance	794.50
land purchased	1,293.00
cemetery expense and surveying	51.20
balance due for cottage at Long Pond	118.70
legal services, salary of financial agent, rent of safe, and sundry expenses	1,417.63
cash carried to new account	8,908.31
	\$38,237.48

The following are the several permanent funds of the asylum, accompanied by lists of the securities in which they are invested.

ADAMS FUND.

(Gift of Isaac Adams, of Sandwich.)

10 shares Pittsburg, Fort Wayne, and Chicago Railroad stock	\$1,000.00
4 shares Suffolk National Bank stock	400.00
2 United States bonds	600.00
1 Iowa Loan and Trust Company bond	1,000.00
	<hr/>
	\$3,000.00

BURROUGHS FUND.

(Legacy of Rev. Charles Burroughs, D. D., of Portsmouth.)

1 St. Louis County bond	\$1,000.00
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CHANDLER FUND.

(Legacy of Abial Chandler, of Walpole.)

25 shares Portland, Saco & Portsmouth Railroad stock	\$2,500.00
37 shares Boston & Maine Railroad stock	3,700.00
100 shares Chicago, Rock Island & Pacific Railroad stock	10,000.00
10 shares Pittsburg, Fort Wayne & Chicago Railroad stock	1,000.00
10 shares Michigan Central Railroad stock	1,000.00
2 shares Northern Railroad stock	200.00
3 shares State National Bank stock	300.00
2 Chicago Water Loan bonds	2,000.00
3 Northern Pacific Railroad bonds	3,000.00
2 Chicago, Burlington & Quincy Railroad bonds	2,000.00
1 Chicago & Northwestern Railroad bond	1,000.00
6 Iowa Loan & Trust Company bonds	3,300.00
	<hr/>
	\$30,000.00

CONANT FUND.

(Legacy of John Conant, of Jaffrey.)

4 Iowa Loan & Trust Company bonds .	\$4,000.00
1 New Hampshire Trust Company bond .	500.00
1 Concord & Montreal Railroad bond .	1,000.00
3 shares Boston & Maine Railroad stock .	300.00
2 shares Boston & Providence Railroad stock	200.00
	<hr/>
	\$6,000.00

DANFORTH FUND.

(Legacy of Mary Danforth, of Boscawen.)

4 shares Suffolk National Bank stock . .	\$400.00
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FISK FUND.

(Legacy of Miss Catherine Fisk, of Keene.)

This fund is held in trust by the State, in accordance with an act of the Legisla- ture approved August 4, 1887 . .	\$26,378.43
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FULLER FUND.

(Legacy of Mrs. Peggy Fuller, of Francestown.)

20 shares Boston & Maine Railroad stock .	\$2,000.00
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KENT FUND.

(Legacy of Moody Kent, of Pittsfield.)

8 Chicago River Improvement bonds .	\$8,000.00
2 Cleveland bonds	2,000.00
5 Concord bonds	5,000.00
3 Minneapolis bonds	3,000.00
3 United States bonds	1,200.00
10 Spokane & Palouse Railroad bonds .	10,000.00
5 Oregon Short Line Railroad bonds .	5,000.00

5 Eastern Railroad bonds	\$5,000.00
10 St. Joseph & Grand Island Railroad bonds	10,000.00
9 Burlington & Missouri Railroad bonds	9,000.00
24 Chicago, Burlington & Quincy Railroad bonds	24,000.00
1 Chicago & Northwestern bond	1,000.00
7 Philadelphia, Wilmington & Baltimore Railroad bonds	7,000.00
10 Boston & Lowell Railroad bonds	10,000.00
4 Northern Pacific Railroad bonds	4,000.00
7 Concord & Montreal Railroad bonds	7,000.00
50 shares Pittsburg, Fort Wayne & Chi- cago Railroad stock	5,000.00
32 shares Northern Railroad stock	3,200.00
100 shares Michigan Central Railroad stock	10,000.00
2 shares Boston & Providence Railroad stock	200.00
50 shares Union Pacific Railroad stock	5,000.00
10 shares Chicago, Rock Island & Pacific Railroad stock	1,000.00
50 shares Fitchburg National Bank stock	5,000.00
47 shares State National Bank stock	4,700.00
7 shares Railroad National Bank stock	700.00
Cash on hand awaiting investment	4,000.00
	<hr/>
	\$150,000.00

KIMBALL FUND.

(Legacy of Jacob Kimball, of Hampstead.)

This fund is held in trust by the State, in
accordance with an act of the Legisla-
ture

\$6,753.49

PENHALLOW FUND.

(Legacy of H. Louise Penhallow, of Portsmouth.)

1 Boston & Lowell Railroad bond . . \$1,000.00

PIPER FUND.

(Legacy of Rhoda C. Piper, of Hanover.)

1 share Railroad National Bank stock . . \$100.00

RICE FUND.

(Legacy of Arabella Rice, of Portsmouth.)

8 New Hampshire Trust Company bonds . \$7,000.00

5 Oregon Short Line Railroad bonds . 5,000.00

3 Northern Pacific Railroad bonds . . 3,000.00

1 United States registered bond . . 5,000.00

\$20,000.00

RUMFORD FUND.

(Legacy of the Countess Rumford, of Concord.)

5 Philadelphia, Wilmington & Baltimore
Railroad bonds \$5,000.005 Burlington & Missouri River Railroad
bonds 5,000.0030 shares Pittsburg, Fort Wayne & Chi-
cago Railroad stock 3,000.0020 shares Boston & Providence Railroad
stock 2,000.00

\$15,000.00

SHERMAN FUND.

(Legacy of Mrs. Fanny Sherman, of Exeter.)

3 Iowa Loan and Trust Company bonds . \$3,000.00

1 St. Louis County bond 1,000.00

1 Boston & Lowell Railroad bond . . 1,000.00

\$5,000.00

SMITH FUND.

(Legacy of Betsey S. Smith, of New Ipswich.)

1 New Hampshire Trust Company bond . . . \$500.00

SPALDING FUND.

(Legacy of Isaac Spalding, of Nashua.)

10 Cleveland bonds \$10,000.00

WILLIAMS FUND:

(Gift of John Williams, of Hanover.)

2 shares Railroad National Bank . . . \$200.00

CONTINGENT FUND.

Deposit in N. H. Savings Bank, Jan., 1892 . . . \$379.43

These funds amount in the aggregate to two hundred and seventy-seven thousand seven hundred and eleven dollars and thirty-five cents (\$277,711.35), an increase since my last report of fourteen hundred dollars, which will be found in the increase of the Fuller fund from six hundred to two thousand dollars, its established amount. In this sum total is also included the Contingent fund of three hundred and seventy-nine dollars and forty-three cents (\$379.43).

On the twenty-sixth day of last December, Mrs. Abigail B. Walker, of Concord, died, leaving to the asylum a legacy of fifteen thousand dollars. It is expected that this will be paid about the first of January next. She was a lifelong resident of this city and possessed a keen sympathy for the afflicted and needy whom she has generously remembered. The annual interest of this legacy will be an important addition to the general income of the funds of the Institution.

During the past year, the financial agent has paid

twelve hundred and ninety-three dollars for land at Long Pond, and eight hundred and fifty-three dollars and fifty-five cents, as one half the cost of the engineer's cottage, erected the present year on the grounds of the asylum.

Respectfully submitted,

J. B. WALKER,
Financial Agent.

CONCORD, N. H., October 20, 1892.

I hereby certify that I have examined the accounts of the financial agent of the New Hampshire Asylum for the Insane, from October 1, 1891, to September 30, 1892, inclusive, and find the same correctly cast and properly vouched for.

I have also examined the securities of the said asylum in the Boston Safe Deposit and Trust Company, and find them all on hand and agreeing with the foregoing statement.

MORRIS CHRISTIE, *Auditor.*

ANTRIM, N. H., October 20, 1892.

GENERAL EXHIBIT.

Products of the Farm and Garden at Market Value, for the year 1892.

Asparagus . . .	95 bunches, at \$0.10	\$9.50
Rhubarb . . .	3,420 pounds, .01	34.20
Lettuce . . .	1,300 heads, .03½	45.50
Cucumbers . . .	280 dozen, .15	42.00
Summer squash . . .	9 barrels, 2.00	18.00
Winter squash . . .	9 tons, 21.00	189.00
Peas . . .	60 bushels, 1.00	60.00
Radishes . . .	140 bunches, .04	5.60
Beet greens . . .	55 bushels, .50	27.50
String beans . . .	46 “ 1.00	46.00
Shell beans . . .	25 “ 1.00	25.00
Pole beans . . .	20 “ 1.00	20.00
Lima beans . . .	25 “ 1.00	25.00
Pickling cucumbers	14 “ 1.00	14.00
Tomatoes (ripe) . . .	50 “ 1.00	50.00
Tomatoes (green) . . .	14 “ .50	7.00
Sweet corn . . .	485 dozen, .10	48.50
Early cabbage . . .	1,150 heads, .06	69.00
Winter cabbage . . .	1,520 “ .06	91.20
Cabbage fed to cows		25.00
Beets . . .	200 bushels, .50	100.00
Potatoes . . .	270 “ .80	216.00
Small potatoes . . .	70 “ .20	14.00
Turnips (table and stock) . . .	260 “ .50	130.00

Early celery . . .	1,800 heads,	\$0.10	\$180.00
Late celery . . .	3,400 "	.06	204.00
Onions . . .	340 bushels,	1.00	340.00
Parsnips . . .	145 "	.75	108.75
Horse-radish . . .	9 "	1.00	9.00
Spinach . . .	60 "	.50	30.00
Salsify . . .	13 "	1.25	16.25
Ensilage, corn . . .	200 tons,	3.00	600.00
Ensilage, rowen . . .	20 "	2.00	40.00
Corn for soiling . . .	75 "	3.00	225.00
Oats " " . . .	30 "	3.00	90.00
Rye " " . . .	60 "	2.25	135.00
Hay . . .	70 "	21.00	1,470.00
Oat hay . . .	1 "	8.00	8.00
Rowen . . .	2 "	10.00	20.00
Milk produced . . .	85,359 quarts,	.05	4,267.95
Pork for use . . .	3,567 pounds,	.07	249.69
Pigs sold . . .	26		115.00
Calves sold . . .	18	1.25	22.50
Beef for use . . .	1,146 pounds,	.05	57.30
Hides sold, with . . .			4.41
Ice cut . . .	2,635 cakes,	.06	158.10
Ice sold . . .	3,276 "	.04	131.04
			<hr/>
			\$9,793.99

Made in General Kitchen.

Piccalilli	2 barrels.
Cucumber pickles	6 "
Mince meat	2 "
Sweet pickle	20 gallons.
Fruit and berries	275 quarts.
Marmalade	24 "
Jelly	24 "

Work Done in Sewing-Room.

Sheets	329
Pillow slips	312
Bed spreads	68
Mattresses	40
Pillow ticks	46
Comfortables	20
Table covers	43
Napkins	132
Towels	626
Laundry bags	29
Carpets	18
Rugs	38
Curtains	164
Stand covers	52
Horse blankets	7
Dresses	141
Skirts	35
Basques	12
Nightdresses	8
Chemises	21
Shirts	45
Gents' aprons	39
Coat	1
Pants	2

APPENDIX.

APPENDIX.

DIRECTIONS CONCERNING ADMISSION.

Those wishing the admission of a person to the asylum should make application to the superintendent previously to bringing the patient unless the urgency of the case precludes it.

On application, full information as to terms, conditions, etc., and the necessary papers will be furnished.

With the application a brief statement of the case should be given.

Some person should accompany the patient who can give a correct history of the case, if possible.

On no account should deception be practiced. The necessity of this step and the arrangements having first been settled, the patient should be honestly informed of what is to take place.

When possible, it is better that patients should arrive in day trains.

Patients should not bring valuable property when committed, and the asylum cannot become responsible for its keeping. Such articles should be left at home, unless the patient is fully responsible for their care.

The parties committing a patient, whether private individuals or town officers, are required to give a bond for the payment of expenses in the annexed form, signed by two responsible persons. The certificates of physicians should be filled and signed in all cases, except those committed by courts, and be written in the annexed form.

FORM OF BOND.

In consideration of the admission of _____, of the town of _____, in the county of _____, and State of _____, as a boarder at the New Hampshire Asylum for the Insane, in the City of Concord, we, of the town of _____, in the county of _____, and State of _____, jointly and severally promise to agree to and with said New Hampshire Asylum for the Insane, to pay its treasurer _____ dollars and _____ cents per week, or such other rate as may from time to time be established by said asylum therefor, while he shall remain at said asylum; together with such extra charge as may be occasioned by _____ requiring more than the ordinary care and attention; to pay any reasonable charge for actual damage done by _____ to buildings or furnishings; to assist in returning _____ to said asylum in case of elopement; to remove _____ from said asylum when required to do so by the superintendent; to pay funeral charges in case of death; and not to hold said asylum responsible for any money, jewelry, watches, or other valuables in possession on admission, or given to _____ afterwards.

Payments to be made quarterly, and interest on all sums not paid at the end of each quarter.

Witness our hands this _____ day of _____, 189 .

Attest :

Principal. [L. S.]

Surety. [L. S.]

NOTE.—Those committing patients are requested to notice the condition in regard to money, jewelry, etc.

FORM OF PETITION.

To be filled and signed by those desiring aid from the state appropriation, to be sent to the superintendent.

To His Excellency the Governor of the State of New Hampshire:

Respectfully represents that _____, an insane person, resident of _____ in this State, is without sufficient property or relatives legally liable for _____ support at the New Hampshire Asylum for the Insane. Wherefore the undersigned prays that the said _____ be aided by any funds appropriated by the State for the indigent insane.

Dated at _____, _____, 189 .

We, the undersigned, selectmen of _____, hereby certify that the representations in the above petition are in our belief true, and that said _____ is an indigent insane person.

N. B. — Please write whether the insane person has any property, and, if so, what amount, and any other facts you may think proper in relation to the ability of the insane person's near relatives.

NOTE. — The amount received by the applicant, it will be understood, is regulated entirely by the number who may apply for aid, and the comparative need of assistance.

ORDER FOR SUPPORT OF TOWN AND COUNTY PATIENTS.

We, _____, hereby order the committal of _____ to the New Hampshire Asylum for the Insane, at Concord, there to be supported at the expense of _____, in accordance with the statute, during _____ residence at said asylum.

_____ 189 .

NOTE. — To be signed by mayor, selectmen, or overseer of poor in case of town charge; by county commissioner in case of county charge.

N. B. — Admission will be refused unless the requirements of the law are strictly complied with. See extract from the laws at the foot of this blank.

FORM OF CERTIFICATE OF INSANITY.

REQUIRED FOR ADMISSION OF PATIENTS.

After due inquiry and personal examination of _____, of
 _____, made within one week prior to date, we certify
 that _____ is insane, and a fit subject for treatment at the
 New Hampshire Asylum for the Insane.

_____, _____, M. D.

_____, _____, M. D.

_____, _____, 189 .

Having personal acquaintance with the signers of the
 above certificate, I certify that the signatures are genuine, and
 the signers reputable physicians.

_____, _____, 189 .

EXTRACT FROM THE LAWS OF NEW HAMPSHIRE.

SECTION 18. No person shall be committed to the asylum for the insane, except by the order of the court or the judge of probate, without the certificate of two reputable physicians that such person is insane, given after a personal examination made within one week of the committal; and such certificate shall be accompanied by a certificate from the judge of the supreme court, or court of probate, or mayor, or chairman of the selectmen, testifying to the signatures, and the respectability of the signers.

L A W S

RELATING TO THE NEW HAMPSHIRE ASYLUM FOR THE INSANE.

THE NEW HAMPSHIRE ASYLUM FOR THE INSANE.

SECTION

1. Corporate name.
2. Trustees, how appointed.
3. Tenure of office of trustees.
4. Trustees to manage affairs of asylum.
5. To appoint officers, etc.
6. Trustees not to receive compensation.
7. To make regulations.
8. May hold property in trust.
9. Shall make report annually.
10. Board of visitors and their duties.
11. Asylum's land taken for highways only by authority of legislature.
12. Property of asylum exempt from taxation.
13. Annual appropriation to library.

COMMITMENT TO ASYLUMS.

14. Parent, guardian, etc., may commit.
15. Insane paupers, how committed by town.
16. County paupers, how committed.
17. Dangerous insane persons, how committed.
18. Certificate of two physicians required to commit.
19. Regulations for commitments to the asylum to govern commitments to other institutions.

SUPPORT AT ASYLUM.

20. When county shall support insane person.

SECTION

21. When means of support fail, counties to support on notice.
22. What inmates of asylum for insane supported by state.
23. County may recover expense paid.
24. Concord not liable.
25. Certain insane persons to be supported by state.
26. Annual appropriation for indigent insane.

DISCHARGE FROM ASYLUM.

27. How discharged from asylum.
28. Trustees to visit asylum and hear statements of patients.
29. Superintendent to furnish stationery to patients, and transmit their letters to trustees.

CORONER'S INQUEST IN CASE OF SUDDEN DEATH.

30. Inquest on patient suddenly deceased.

COMMISSION OF LUNACY.

31. Insane persons wards of state.
32. Commission of lunacy.
33. Powers and duties of commission of lunacy.
34. Records and reports of commission of lunacy.
35. Superintendents to make reports to commission of lunacy.
36. Annual appropriation for expenses of commission.

SECTION I. The asylum for the insane, at Concord, is a corporation under the name of the New Hampshire Asylum for the Insane.

SECT. 2. The government of the asylum is vested in twelve trustees, appointed and commissioned by the governor, with advice of the council; and all vacancies shall be filled in the same manner.

SECT. 3. The trustees are classified and commissioned in such manner that the offices of three trustees become vacant annually.

SECT. 4. The trustees shall take charge of the property and concerns of the asylum; shall see that its affairs are conducted properly; may enter into and bind the asylum by such contracts relative to the support of patients and the affairs of the asylum as they may deem advantageous; and may receive, appropriate, control, convey, or invest any property given to or owned by the asylum in such manner as they may think expedient.

SECT. 5. The trustees shall appoint a secretary, who shall keep a full and fair record of their proceedings; a treasurer, who shall give bond for the faithful discharge of his duty; and such physicians, officers, and assistants, with such salaries and allowances, as may from time to time be found necessary.

SECT. 6. No trustee shall receive any compensation for his services as trustee; but expenses necessarily incurred by him shall be paid by the asylum.

SECT. 7. The trustees may make such regulations for their own government, for the management of the asylum and all persons connected therewith, and for the admission and care of patients, and the same from time to time alter, as convenience may require.

SECT. 8. The asylum may take and hold in trust any grant or devise of real estate, or any donation or bequest of personal property, and may apply the same, unless otherwise restricted, to lessen the expenses of the indigent insane.

SECT. 9. The trustees shall make to the governor and council, annually, a report, covering that of the superintendent to them, of the receipts and expenditures of the asylum,

the number of patients admitted and discharged during the year, and all other matters connected with the general interests of the asylum. It shall be filed in the office of the secretary of state on or before the first day of December.

SECT. 10. The governor and council, president of the senate, and speaker of the house shall constitute a board of visitors of the asylum; shall visit and inspect the same when necessary; examine into the condition of the patients, and the regulations and general management of the asylum; see that the design thereof is carried into full effect; and make to the legislature, at each biennial session, a report which shall be furnished to the secretary of state on or before the first day of the December next preceding such session.

SECT. 11. No land connected with the asylum shall be taken for a highway or other public use, except by the express authority of the legislature, for that purpose first had and obtained.

SECT. 12. The property of the asylum is exempted from taxation.

SECT. 13. The sum of one hundred dollars is annually appropriated toward the support and increase of the library of the asylum.

COMMITMENT TO ASYLUMS.

SECT. 14. The parent, guardian, or friends of any insane person may cause him to be committed to the asylum, with the consent of the trustees, and there supported on such terms as they may agree.

SECT. 15. Any insane pauper supported by a town may be committed to the asylum by order of the overseers of the poor, and there supported at the expense of the town.

SECT. 16. If the overseers neglect to make such order in relation to any insane county pauper, the supreme court, or any judge thereof in vacation, may order such pauper to be committed to the asylum, and there supported at the expense of the county.

SECT. 17. If any insane person is in such condition as to render it dangerous that he should be at large, the judge of probate, upon petition by any person and such notice to the selectmen of the town in which such insane person is or to his guardian or any other person as he may order, may commit such insane person to the asylum; and such petition may be filed, notice issued, and hearing had in vacation or otherwise.

SECT. 18. No person shall be committed to the asylum for the insane, except by an order of the court or the judge of probate, without the certificate of two reputable physicians that such person is insane, given after a personal examination made within one week of the committal. Such certificate shall be accompanied by a certificate of a judge of the supreme court or court of probate, mayor, or one of the selectmen, certifying to the genuineness of the signatures and the respectability of the signers.

SECT. 19. All laws relative to the commitment of insane persons to the New Hampshire Asylum for the Insane shall govern the commitment of insane persons to all other places in this state where insane persons are confined; but no insane person, other than a pauper, shall be admitted to any county asylum.

SUPPORT AT ASYLUM.

SECT. 20. Any insane person committed to the asylum by his parent, guardian, or friends, who has no means of support and no relatives of sufficient ability chargeable therewith, and no settlement in any town in this state, and who is in such condition that his discharge therefrom would be improper or unsafe, shall be supported by the county from which he was committed.

SECT. 21. When the means of support of any inmate of the asylum shall fail or be withdrawn, the superintendent shall immediately cause notice in writing of the fact to be given to one of the county commissioners of the county from which such inmate was committed; and such county shall

pay to the asylum the expense of the support of such inmate from and after the service of such notice, and for ninety days next prior thereto.

SECT. 22. Any insane person charged with an offense, the punishment whereof is death or confinement in the state prison, committed to the asylum by order of the supreme court, shall be supported at the expense of the state during his confinement there. Any other insane person committed to the asylum by the supreme court or a judge thereof, and any insane person committed by a judge of probate, shall be supported by the county from which he was committed.

SECT. 23. The county or town paying the expense of the support of an inmate of the asylum shall be entitled to recover the amount so paid of the inmate himself, if of sufficient ability to pay; otherwise of the town, county, or person by law liable for his support.

SECT. 24. The city of Concord shall not be liable for the support of any insane person committed to the asylum unless he was committed from said city.

SECT. 25. Any insane person who has been an inmate of the asylum for twenty years and been supported in whole or in part during that time by others than the town or county chargeable therewith, and who has no means of support and no relations chargeable therewith, and who cannot properly be discharged from the asylum, shall be supported there at the expense of the state.

SECT. 26. The sum of six thousand dollars is annually appropriated for the support at the asylum of such indigent insane persons belonging to the state as the governor, from time to time, may designate; but two thirds at least of the sum shall be applied to the support of private patients who are not maintained at public charge.

DISCHARGE FROM ASYLUM.

SECT. 27. Any person committed to the asylum may be discharged by any three of the trustees, by the commission of

lunacy, or by a justice of the supreme court, whenever a further retention at the asylum is, in their opinion, unnecessary; but any person so discharged who was under sentence of imprisonment at the time of his commitment, the period of which shall not have expired, shall be remanded to prison.

SECT. 28. Some one of the trustees, without previous notice, shall visit the asylum at least twice every month, and give suitable opportunity to every inmate therein to make to him, in private, any statements such patient may wish to make; and, whenever he deems it proper, he shall call to his aid two other trustees, who shall, with him, make a further examination of such inmate and of the statements by him made. If, in their judgment, a further detention is unnecessary, it shall be their duty to discharge such inmate. They may order such immediate change in the treatment of any inmate as they deem judicious; and, in case of failure to secure it, they shall at once summon a meeting of the whole board, whose duty it shall be to take such measures as the exigency of the case demands.

SECT. 29. The superintendent shall furnish stationery to any inmate who desires it; and shall transmit promptly and without inspection, to the trustee whom the board may designate, all letters addressed to the board by inmates of the asylum.

CORONER'S INQUEST IN CASE OF SUDDEN DEATH.

SECT. 30. In event of the sudden death of any inmate, a coroner's inquest shall be held, as provided for by law in other cases.

COMMISSION OF LUNACY.

SECT. 31. All persons deprived of their liberty in this state by being committed to custody as insane persons, shall be wards of the state and subject to state supervision.

SECT. 32. The state board of health shall constitute a commission of lunacy.

SECT. 33. The commission, by one or more of their members, shall, without previous notice, visit and make thorough inspections of all asylums and other institutions for insane persons in the state, as often as once in four months. They shall examine into the care and treatment of the insane, the sanitary condition of each asylum or institution, and all other matters relating to the general welfare of the inmates. They may order the removal of any indigent insane person to the New Hampshire Asylum for the Insane for remedial treatment, and such person while under such treatment shall be supported at the expense of the state. When the need of such treatment shall cease, the commission shall so notify the county, town, or relative liable for the support of such inmate, and if he is longer continued at the asylum it shall be at the expense of such county, town, or relative.

SECT. 34. The commission shall keep a correct record of the number of commitments, discharges, and deaths at each asylum, institution, or other place of detention, and of the age, sex, and nationality of each person committed, discharged, or deceased, and shall report the same annually to the governor and council, with any other matters or recommendations which in their judgment are important.

SECT. 35. The superintendent of every asylum or other place in this state where insane persons are confined, shall, within three days after the commitment thereto of any person, notify the commission thereof, upon blanks furnished for that purpose; and the said superintendent shall at all times furnish to the board such information regarding the insane in his charge as they may request.

SECT. 36. To meet the expenses imposed upon the commission by the foregoing sections, the sum of twelve hundred dollars, or so much thereof as may be required, is annually appropriated; and the expenditures shall be audited by the governor and council.

BY-LAWS

OF THE NEW HAMPSHIRE ASYLUM FOR THE INSANE,
ADOPTED BY THE TRUSTEES AT A MEETING OF THEIR
BOARD HOLDEN OCTOBER 31, 1878, WITH SUBSEQUENT
AMENDMENTS.

SECTION 1. The annual meeting of the board of trustees shall be holden at the asylum, in Concord, on the third Thursday of November of each year, and a semi-annual meeting shall be held on the third Thursday of May of each year.

SECT. 2. The trustees shall, at the annual meeting, elect by ballot a president, secretary, and treasurer, who shall hold their respective offices one year, and until others are chosen in their stead. At times, when either of said offices is vacant, it may be filled at a special meeting of the trustees duly called for that purpose.

SECT. 3. Notice of the annual and semi-annual meetings shall be given by the secretary to each trustee, either verbally or by mail, at least fourteen days previous to the day of meeting; and any meeting may be continued by adjournment, from time to time, until the business thereof shall be completed. In case of omission to notify the annual meeting, the same shall not be lost, but shall be considered as adjourned for the transaction of business, until the required notice thereof shall be given, which the secretary shall forthwith proceed to give.

SECT. 4. The president, or any four of the trustees, may call a special meeting of the trustees whenever in the opinion of either it may be deemed expedient so to do; and the same

notice shall be given of a special as of the annual meeting, which notice shall state specifically the business to be brought before such meeting. In case of a vacancy in the office of secretary, the president shall notify the annual meeting.

SECT. 5. A majority of the members of the board shall constitute a quorum for the transaction of any business; but any less number, at a meeting duly called, may adjourn from time to time until a quorum be obtained.

SECT. 6. Two of the trustees shall visit the asylum each month; and notices of the months by him selected, or to him assigned, shall be sent to each member by the superintendent before the first day of such month.

SECT. 7. No trustee shall receive any compensation for his services as trustee; but expenses necessarily incurred in rendering the same shall be paid by the asylum.

SECT. 8. The trustees shall, at each annual meeting, appoint from their number an auditor, whose duty it shall be to examine the books and audit the accounts of the treasurer and of the financial agent for the ensuing year, and make a written report to the board, at their annual meeting.

SECT. 9. The treasurer shall give a bond, acceptable to the trustees, in the penal sum of fifteen thousand dollars, for the faithful performance of his duties for and during such time as he shall continue to hold the office of treasurer, which bond shall be deposited with the president of the board.

SECT. 10. The treasurer shall receive, hold, and disburse all moneys coming to the asylum, except the permanent funds and the income thereof. He shall make an exhibit of the state of his books, and of the property in his custody, when called for by the trustees. He shall make up his accounts to the thirtieth day of September, inclusive, in each year, which accounts, with his report thereon, shall be laid before the trustees at their annual meeting. His books shall at all times be open to the examination of the trustees.

SECT. 11. The treasurer shall pay all bills approved by the superintendent, and, in addition thereto, such orders as

the superintendent may draw on him for the ordinary expenditures of the asylum, when said offices are held by different individuals.

SECT. 12. The treasurer shall receive such compensation for his services as the trustees may from time to time determine.

SECT. 13. The secretary shall attend all meetings of the board of trustees, and keep a record of their proceedings. He shall also prepare, or cause to be prepared, all documents, statements, and notices which may be ordered by the board, or by the president thereof.

SECT. 14. The secretary shall receive such compensation for his services as the trustees may from time to time determine.

SECT. 15. The board of trustees shall appoint a superintendent, who shall be a physician, and reside at the asylum. He shall have the entire control of the treatment and management of the patients; the power to appoint and discharge all persons employed in their care; and shall exercise a general supervision and direction of every department of the institution.

SECT. 16. The superintendent shall make a written report to the trustees, at their annual meeting, of the condition of the asylum and embracing such other topics as may have been suggested by the progress of the institution and the experience of the year.

SECT. 17. The superintendent shall receive for his services, in addition to furnished apartments, board, lights, and fuel for himself and family, such a salary as the trustees may from time to time determine.

SECT. 18. The superintendent shall furnish, to the acceptance of the trustees, a bond for the faithful performance of his duties in the penal sum of ten thousand dollars, which bond shall be kept by the president of the asylum.

SECT. 19. The superintendent shall appoint two assistant physicians, who shall reside at the asylum. They shall pos-

sess such characters and qualifications as will enable them to discharge the ordinary duties of the superintendent, and shall at all times perform such duties as he may assign them, and to his acceptance.

SECT. 20. The assistant physicians shall receive such compensation for their services as the trustees may from time to time determine, in addition to furnished apartments, lights, fuel, and board.

SECT. 21. All funds amounting to one hundred dollars and upwards, which have heretofore been or which may hereafter be given to the New Hampshire Asylum for the Insane, shall, unless otherwise ordered by the donors, be entered upon the books of the financial agent as permanent funds, with the surnames of the donors attached to each, and be forever kept intact. The income of each shall be expended from time to time in accordance with the conditions upon which it was given, or, in the absence of conditions, in such manner as the trustees shall deem to be for the highest interest of the asylum and its patients.

SECT. 22. There shall be chosen, by ballot, a financial agent, who shall have charge of the permanent funds of the asylum, shall collect, and, under the advice of the finance committee, from time to time invest, manage, and disburse any moneys arising therefrom. He shall be, *ex officio*, a member of the finance committee, shall give a satisfactory bond for the faithful performance of his trust in the sum of twenty-five thousand dollars, and continue in office until his successor is elected. He shall receive for his services such compensation as the trustees shall from time to time determine, and make up his accounts to the thirtieth day of September, inclusive of each year.

SECT. 23. The trustees shall annually choose two from their board, who, with the financial agent, shall constitute a finance committee, and have general supervision and control of the permanent funds of the asylum, with power to sell and transfer any stocks, bonds, and other securities belonging to

said funds, whenever, in their judgment, it may be expedient so to do.

SECT. 24. Besides attending the annual meeting, the trustees shall severally visit the asylum twice each year, in such months as they may select, or as may be assigned to them; make a thorough examination of the house and of the condition of the patients; and, before leaving, make a record of their respective visits in a book to be kept at the asylum for that purpose.

SECT. 25. These by-laws may be altered or amended at any annual meeting by a vote of two thirds of the trustees present, or at a special meeting called for that purpose.

NEW HAMPSHIRE ASYLUM

TRAINING SCHOOL FOR NURSES.

INSTRUCTORS.

C. P. BANCROFT, M. D.

EDWARD FRENCH, M. D.

A. C. NASON, M. D.

JULIA WALLACE RUSSELL, M. D.

CHARLES R. WALKER, M. D.

CARRIE M. DEARBORN,

Superintendent Boston Cooking School.

The trustees of the New Hampshire asylum having established a training school for nurses at that institution, offer to give women desirous of becoming professional nurses, a two years' course of training in general nursing, with especial reference to the care of cases of nervous and mental disease.

Those wishing to receive such instruction must apply to Dr. C. P. Bancroft, superintendent of New Hampshire Asylum, Concord, N. H.

The most desirable age for candidates is from twenty to thirty-five years. They must be in sound health, and sufficiently interested in the subject of nursing and free from all incumbrances so that they can, in all reasonable probability, complete the prescribed course of two years.

The superintendent of nurses has the immediate charge of the training school under the authority of the superintendent of the asylum, and the nurses are subject to the rules of the asylum. The right is reserved to terminate the connection of

any nurse or pupil with the school for any reason which may be deemed sufficient.

All nurses are required to be intelligent, trustworthy, kind, and cheerful.

The instruction includes the general care of the sick, the making of beds, changing bed and body linen, managing of helpless patients in bed, etc., giving baths, keeping patients warm or cool, prevention and dressing of bed sores, and the proper management of patients under various conditions of disease; the making and applying of bandages; the dispensing of drugs; the management of patients in accidents and emergencies; the application of poultices, the dressing of burns, ulcers, and wounds; the administering of enemas, and the use of the female catheter.

A course in cooking for the sick will be given by a competent instructor from the Boston Cooking School. Instruction will be given by the superintendent of nurses, by the medical staff at the asylum, and by physicians and surgeons resident in the city.

Students in the training school act as nurses in the various wards of the asylum, during their term of service. During the first year they receive from \$3 to \$3.50 per week; during the second year, from \$3.50 to \$4 per week.

When the full term of two years is completed, the nurses receive, if they pass all the examinations and their service in the asylum has been satisfactory, a diploma, certifying to the completion of the regular training and practice. Nurses who have served the full course in this asylum have found ready engagement as head nurses in the asylum, with wages of \$20 to \$25 per month, or as private nurses outside, at from \$10 to \$15 per week.

Nurses are required to wear at all times while on duty in the wards, the training school uniform.

The school begins in the fall, but accepted candidates may enter at any time, as vacancies occur. They are, as a rule, received in the order of their application.

QUESTIONS TO BE ANSWERED BY CANDIDATES.

1. Name in full of candidate.
2. Are you married, single, or widow?
3. Your present occupation or employment.
4. Age last birthday, date and place of birth.
5. Are you strong and healthy?
6. Height? Weight?
7. Are you free from domestic or other responsibility so that you are not liable to be called away?
8. Name of any responsible person for reference.
9. Have you ever served in any other asylum or hospital, and if so, when and where?

Having read and clearly understanding and agreeing to the foregoing conditions and regulations, I declare the above statement to be correct.

(Signed)

Present address,

Date, 189 .

GRADUATES OF THE SCHOOL.

CLASS OF 1890.

Ellen H. Colton,	Addie J. Eastman,
Millie C. Godfrey,	Y. Farouhian,
Mary E. Londergan,	Mabel Bacon,
Winifred C. Dillon,	Helen F. Baker,
Sarah A. Taylor,	Annie E. Harris,
Nellie Redman.	

CLASS OF 1891.

Katherine Jones,	Gertrude Dillon,
Mary L. Wood,	Lilla M. Felch,
Clara L. Coombs,	Mabel Darling,
Laura J. Hazlitt.	

CLASS OF 1892.

Adelaide G. Waters,	Jessie B. Lang,
Ettie E. Cook,	Elizabeth Ackland,
Nettie Kinread.	

GRADUATING ADDRESS TO THE CLASS OF 1892.

DELIVERED BY REV. D. C. ROBERTS.

The following address was delivered in the asylum chapel on the evening of June 15, to the class of 1892, by Rev. L. C. Roberts, of Concord:

The ideal nurse is the eyes and hands and heart of the physician.

It is one of the strange things in life and human nature that for so many ages men were insisting upon the careful study of the externals and incidentals of therapeutics, without demanding the same education in the very applications and processes of the healing art. It is amusing, exasperating, and depressing to follow the history of medicine. It is amusing to see "what fools these mortals be," and how for centuries men followed like sheep the lead of some cunning charlatan or innocent dabbler, in the concoction of villainous doses and the application of curiously devised tortures to the human frame. Men studied the guesses of other men, and called it science. Meantime the truly artistic part of the business was left to ignorant kindness or to the vision and touch, quickened in perception and control by the miracle of love. The sufferer was nursed back to life almost in spite of the crude and cruel methods of medical treatment. Before a real basis of science had been established in the intelligent study of physics and physiology, nature and sense, art and heart, had conspired to relieve suffering, retrieve error, and rescue the victim.

The question has been seriously debated whether the practice of medicine be a science or an art. I believe it to be both. There is no true art which has not its basis in science. The art of music cannot be acquired in any perfection without study of the science of harmony, of resonance, of vibration, of all the physical particulars of sound. And on the other hand the most scientific knowledge of the physical facts will not produce a Stradivarius violin. Any mechanic of parts can learn the mechanism of a piano, but, as we know to the cost of our ears, none but an artist can construct a worthy instrument. The art of sculpture depends upon the most accurate, I may say the most exquisite, knowledge of physiology and the mathematical science of proportion. In fact there can be no art without a science. Genius does not fly like a bird. It flies like a kite. Its flight depends upon its being kept in constant check by the facts that communicate with the solid earth. Make that sure and the winds that surge against it do but lend it wings.

I think the most conservative student of physics to-day will agree that there is a true science of medicine. There is a thoroughly developed physiology, a pathology, not so well grounded, a pathogeny which if the germ theory be in any wise a safe generalization, is making a place for itself. In the department of therapeutics comes the true application of all the knowledge gained in every other line of study, and here is the true domain of art. Art has a good meaning and a bad one. The conscientious, studious physician, the nurse, like minded, these have *art*, true, earnest, loving, the expression of the truest aspiration of the soul, the desire of the heart to know the works and ways of the Creator and to follow therein. The charlatan physician, the nurse for revenue only, these have *arts*, sordid, cunning, unworthy. And the average legislator as well as the average patient, doesn't know the difference. But in both the department of the physician and that of the nurse there is art and there are arts. Let me illustrate.

There is always, perhaps I am safer in saying generally, a psychological factor in therapeutics. Mind and temperament and their especial organs, the nerves, must be considered. The physician with a brain and a conscience, the nurse with a conscience and a heart will not fail to consider that factor and to use it cautiously, keeping in view the physical facts, and keeping in view as well the tremendous power for evil, an evil beyond our ability to check, which is liable to be developed here. The quack physician, the charlatan nurse, will use this mysterious power, little heeding the possible wreck, the imminent peril. In every soul there is a germ of faith, capable of such development as to respond with the very glow of returning health to the command of the Man of Galilee, capable also of such distortion and disaster, disaster to the body, mind, and soul, that have come of the doings of the pretenders to a "science, falsely so called."

The nurse has most to do with the psychological factor. She brings to bear upon the mind and heart, the intelligence and the affections of the patient the mysterious magnetism of her own personality. And as this is likely to become an active element through the influence of first impressions, I put it first in the order of my suggestions. Skill in manipulation is of less than its estimated worth without the power of eliciting confidence. I have known a most skillfully applied bandage to be torn off by the patient because he hated the accomplished nurse who wrapt it.

It is most true then that a part of the training and discipline of a nurse must be the establishment of character. And a great part of this must come of self-discipline. Self-control must go before control of others. There is confidence in one's self, and there is self-confidence, and they are very different qualities. Learn to believe in your own truth, earnestness, and reality of purpose and cultivate those traits. Consider that your vocation is not simply a matter of scientific treatment or artistic skill, but an errand of mercy. Consider that you, as mercy's messenger, are endowed first with

its own heavenly purpose, touched with the light of the divine love, and next, as an instrument of that with specialized powers, cultivated capabilities, knowledge, and skill for the doing of love's own work of mercy.

With this equipment of soul as well as of mind you will consider your part and duty and what instrumentalities you have. First, yourself. Absolutely clean of body, punctiliously tidy of raiment, so clad that the patient recognizes in a moment your calling and your authority, you bring hope with your presence. Don't be above the philosophy of clothes. You have heard that there is healing in the squeak of the doctor's boots, be sure there is refreshment in the dainty costume that has come to be respected as the dress of a nurse. Some way or other it suggests enthusiasm and inspires it. There is a tonic in the very set of the cap. You have come, bringing hope. Do not let hope droop for a moment. You are its harbinger. You have inspired confidence, do not lose it. The tired eyes are looking at you with eagerness, ready to light up with a very real and wholesome affection. Do not let the light fade. If you are true you will be trusted, if you are loving you will be beloved, and trust and love are potent medicines.

Of course you work for pay. But don't worry about that. If you are worth anything you are worth all you cost and no bill is more cheerfully paid. But if you measure your work by your pay you are nothing worth.

That is a necessary incident, but your real work, your best work, and the physician's and mine can never be measured by pay. And it never is. If you can get great pay, be thankful for it, but when your work is in hand forget all about that; do not let a mercenary thought sully the unselfish devotion of the moment. Sometimes you will work without any hope of pay and will marvel to see how your very best feelings and powers are evoked by that very circumstance.

Your technical training must be seconded by that power and use of the imagination which anticipates experience.

We call that originality. Being original does not consist only in thinking of new things or doing them. It is quite as truly original to make the thoughts of others your own quickly, readily, clearly, and to be able to act upon them with intelligence and enthusiasm. You are expected to carry out the physician's instructions conscientiously. But you fail in that if you put none of your own thought in the work. Do as he says but do it as though you had said it yourself. Give to his directions the response of your mental coöperation as well as the mechanical obedience of your hand.

We who are placed under your care in the hour of our weakness do not wish to be obliged to do our own thinking. But we are obliged to if you do no original thinking. We feel the tonic that there is in your authority, too, but we are put back many degrees in our recovery by the fever of resentment if you make exhibition of it. The gentleness which wins the heart is the secret of the authority which controls without force or fret. The ideal nurse has it, and nothing short of the ideal must be your aim. The faculty which I have called originality, the power of assimilating ideas, must be joined with quickness of apprehension; this is a power to be cultivated, along with that of minute observation. This will sometimes lend to a small incident the educative power of a large experience. Experience too often means suffering; in the case of a nurse, suffering for both nurse and patient. Learn to find experience which has no pang in the suggestions of every-day things.

There is one thing I wish to seize this opportunity to say. You come into our homes and take possession of them. All their resources are yours. Don't make us feel chagrin because those resources happen to be scanty. If we are rich we give you carte blanche. Try to make us believe that you have it, if we are poor, but don't take it. Enter with zeal into our economies. Help us with your ideas in the art of making our little go a great way. Realize along with us the burden and trial of inefficient domestic service and don't instigate insurrec-

tion in the kitchen, or challenge it. In that department lies a difficulty which calls for the exercise of your virtues not less than your genius. And while on the subject of domestic difficulties allow me a further word of exhortation. In common with the parish priest and the family physician, the wise and trusted nurse will learn whether there be a sorrow or a sin such as is called in cruel jest, "the skeleton in the closet." Guard such a secret as you guard your honor. If you are not taken into confidence be blind and deaf to it, and above all things dumb. If you are burdened with confidences about it, it is the supreme test of your discretion, the loftiest challenge of your charity.

You go into homes where sorrow has entered before you. The sunshine is dimmed by the shadow of grief, cheer is darkened by anxiety. The loved one is in suffering and peril. Hearts are touched and are tender. Your way is already made for you. Anticipation has idealized you. Your look, your tone, your touch, ah, what magic is possible to them! They may bring confidence, comfort, and sleep o' nights. If you have training of heart, as well as hand, the physician will prescribe you as a tonic. The training school can give you much, it cannot give you all.

There is just one school which can develop the highest powers with which you are gifted. It is the school of Him of Calvary. He went about doing good. He healed the sick. He bound up the broken in heart. Love of the children of sorrow in the name of Him who loved us and gave Himself for us, that is the potent thing. Self-sacrifice, profound consecration of heart and life to the grand mission to which in the providence of God you have been called for the sake of Him who offered that one great sacrifice which is to this day and for all time our only and our constant plea, in all our weaknesses of body and of soul, such self-sacrifice will fill your eyes with light, your hands with power. With faith in your soul, with prayer in your heart and on your lips, you may be working the miracles of love. Ah, with what gra-

cious charge and office you have been invested; with what divinest graces you may be endowed!

There is probably no great falsehood which has prevailed with men that has not in it some vitalizing germ of truth. And whatever of such potency there may be in "faith cure" and "Christian Science," and I have no doubt there is what is called in the science of mechanics a "potential" of truth in them, whatever it be, you have it. Distinctly it is not science. It lies in the domain of psychology, your domain, the domain of art, art in its highest functions, which is the expression of faith, the utterance of the consciousness of God's truth, the interpretation of love.

Once upon a time a "trained nurse" puzzled me greatly by the singular boast that she had been more fortunate than her fellows and had done no "drudgery." Drudgery! Save the mark! there is no such thing. Some of the most necessary offices, upon whose faithful ministry life itself may depend, are only redeemed from being repulsive by the quality of mercy. And some there are, most toilsome and fatiguing, which have in them the very article of science, the fullest inspiration of your art. Bring to any duty or any enterprise in life a sordid soul and your touch contaminates beauty itself with squalor. Bring a true hearted zeal, the enthusiasm of genius, the splendor of charity burning in your own soul, and the humblest office, the lowliest ministry is touched with the light of Heaven. Here you do but stoop to conquer, here you humble yourself to be exalted with a glorious exaltation.

One more word on a practical matter. It is said that a good man o'wars man is never surprised. This I should think to be a virtue in nurses, and a point in the success of training. There is in this at times a true measure of heroism, and heroism is one of those distinguished badges. Cool of head, strong-hearted, resolute, unflinching in courage, "plucking the flower safety out of the nettle danger," gentle, not because you are weak, but because you are strong, with

ready wit, prompt action, and unfaltering intrepidity, you have the grace and greatness of true heroism. Such is the high standard of your most gracious calling.

I congratulate you upon this turning point in your career, and I pray you, magnify your office. Magnify it? Idealize it! Set before yourselves so high a thought of possible achievement that it shall be a constant inspiration. The wisdom of the world is busy providing you at once with ideas and instruments. The divine precepts and the holy example of the Son of God lie within the horizon of your daily life. What nobler challenge can come to human soul, what higher calling can find echo and response in human heart, what sweeter task than yours can be set for human hands!

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THE BUREAU OF GOVERNMENT RESEARCH
University of New Hampshire
Durham, New Hampshire

SERVICE MANUAL.

A strict observance of the following rules is the established condition of all contracts for service with the New Hampshire Asylum for the Insane; and any applicant for a position, not willing to observe them strictly, will do better to seek employment elsewhere.

1. Any employé wishing to leave the premises to go into the city or elsewhere must apply at the office, that such absence may be understood; and all must be at the asylum at 9.30 o'clock in the evening, unless away later by permission.

2. It is expected that all persons employed will consider that, on the conditions of their respective contracts, they have engaged their time and best services to the asylum; that it is inconsistent with their duties to hold any political office; that they are under obligations to do every duty assigned them, promptly and faithfully; that they will feel personally interested in the good care, safety, and welfare of the patients; and that they will give their personal influence in support of good order and the established regulations of the institution. To this end it is most desirable that all should cultivate quiet, kind, and dignified manners and correct habits in all things, considering always that this is no less for the interest of the employé than for that of the employer.

3. Those proposing to discontinue their services will give at least thirty days' notice, that time may be given to supply their places.

4. That the house may be quiet, it is expected that all will be at their own rooms after 9.30 o'clock in the evening, at

which time the house is closed for the night. After this time the quiet of the house must not be disturbed by passing and conversation. All must bear in mind that the repose of the patients is a thing of prime importance. All having duties must rise at the morning bell and proceed to the performance of the same.

5. No light must be carried about the buildings except in a lantern, and the greatest care must be taken in the use of matches that none be left exposed. A little carelessness in this thing might be followed with the most serious consequences. No smoking will be allowed on the asylum premises, except in the smoking-room provided for that purpose.

6. No one will invite visitors to stop in the house without permission to do so; but on application all reasonable privileges will be granted.

7. No one shall employ a patient to do private work for himself or herself without the consent of the superintendent, assistant superintendent, or other officer authorized to give such permission; and no one is allowed to trade or make bargains with patients.

8. Provision is made to afford each person employed a vacation of two weeks in the year, during which time the duties of the position will be done by a substitute; but the superintendent does not guarantee to retain the place of any one for a longer term of absence. On leaving for a vacation, or permanently, every one will deliver his or her keys at the office.

9. Whenever patients are encouraged to engage in any kind of labor, it is with a view to their own benefit; and hence no one will be taken from the halls for that purpose unless some order to that effect has been given in the case.

10. The person taking patients to labor will be held strictly responsible for their safety, kind care, and safe return to their respective halls.

11. All farmers or others to whom patients are intrusted for labor will remember that they are not to be treated as servants; they will avoid all appearance of commanding, and

will exercise the greatest care that no willing one shall be made a drudge or work too long. It will be treated as a grave offence if any employé shall take advantage of the willingness or mental weakness of any patient to impose on such one the harder or more unpleasant parts of the work on which they are employed. The head farmer is required to see that this rule is obeyed in spirit and letter, and report promptly to the superintendent any violation of the same. As occupation is a thing of the greatest value to most patients, every employé is required to do all in his or her power to interest them in it in some form, and make it attractive.

As far as practicable, provision will be made to give each employé opportunity to be absent from duty for church services on Sunday a due proportion of the time; and any whose ordinary labor is wholly suspended on Sunday are liable to be called on to relieve others, whose duties continue, a portion of the time, and such must hold themselves in readiness to be so called on. It is expected that all employés, whose duties do not interfere, will be present at the regular Sunday service in the chapel.

STEWARD.

The steward will have the general oversight of the buildings, farm, stock, and premises. It will be his duty to attend to ordinary business transactions, and see that asylum property in every department is saved, kept in its proper place, protected from harm or waste, and properly used. He will see that everything about the premises is kept in good order, that the grounds near the house are kept clean, free from waste and rubbish, and will extend the same supervision to the basement and attics, and see that the person to whom it is assigned to care for these spaces discharges his duty faithfully. He will see that all animals are properly taken care of, and that carriages, tools, and implements are kept in repair, and stored in their places when not in use; and, generally, he will be responsible to the superintendent for the good condi-

tion of property and premises, and must properly notify him of anything adverse to the welfare of the asylum which comes to his knowledge. He will attend to procuring ordinary supplies for subsistence, except so far as otherwise provided for by the superintendent, and see that such goods are delivered and stored in their proper places. He will see that the house is closed and the doors locked at the appointed hour at night, and hold himself ready to discharge any special duty required by the superintendent.

CLERK.

It will be the duty of the clerk to keep the books and accounts in a neat and accurate manner, take systematic care of all papers connected therewith, and perform any special clerical work required by the superintendent.

HOUSEKEEPER.

SECTION 1. The housekeeper will have the general management of the internal domestic affairs. The labor in the kitchen, laundry, and sewing department will be done under her direction; and those employed in these departments will hold themselves subject to her orders in the discharge of their duties. She will attend to the good condition of all apartments connected with the general housekeeping, will see that they are properly furnished and kept in good order. She will see that all the work in her departments is done in accordance with the general instructions of the superintendent.

SECT. 2. She will have the care of all goods and material used in her department, and will see that they are saved and economically used; all bedding and articles manufactured for housekeeping purposes will be under her care, and she must see that they are not wasted or given out needlessly. She will have the care of the making of any clothing furnished to female patients, and will be required to keep an accurate account of the cost of such clothing or other articles furnished to any one. The cost of any articles furnished for patients

must be returned by her to the supervisor, to be entered in the accounts of such patients.

SECT. 3. It is the duty of the housekeeper to report to the superintendent any instance of misconduct, failure in the proper discharge of duty, or violation of the established regulations occurring in her department, and not promptly rectified by the delinquent. It will also be her duty to report to the person who keeps the time-book the times of commencing and leaving duty of all employed in her department.

SUPERVISORS.

SECTION 1. The supervisors in their respective departments will have the general oversight of the halls and the patients; and the prudence and tact with which their duties are performed will be an important factor in the condition of the house. It is expected that they will see that the rules of the house relating to the patients are observed in every particular; that all patients are treated with uniform respect and kindness; and it is their imperative duty to report immediately to the superintendent or assistant superintendent any instance of neglect, incivility, or ill usage of a patient, or any violation of the established rules.

SECT. 2. They will see that all medicines prescribed are faithfully and in a proper manner administered, and that all directions of the medical officers are strictly obeyed.

SECT. 3. They will be expected to pass as much time in the halls as the proper discharge of other duties will allow, will instruct new attendants in their duties, and as much as possible assist in efforts to interest and employ the patients.

SECT. 4. The supervisors must see that the dining-rooms are furnished with the necessary utensils, that the attendants take proper care of the dining-rooms, that the cupboards are sweet and in order, the tables neatly set, and the meals properly served.

SECT. 5. They will have the general charge of the clothing of the patients, and an oversight of the beds and bedding

of the halls. The attendants must report to them any deficiency in either which may exist, and it is their duty to see that such wants are supplied.

SECT. 6. On the admission of patients, their clothing will be taken in charge by the supervisors, entered in the book provided for the purpose, and each article plainly marked. All articles afterwards furnished or received will be cared for in the same manner.

The clothing of patients leaving must be compared with the record, neatly packed, and delivered at the office by the appropriate supervisor.

Any knives, razors, or other dangerous article in possession of a patient on admission must be brought to the office for safe-keeping and record.

SECT. 7. They will pay special attention to the sick, report promptly at the office any change of symptoms, see that they have proper attention, and that any special diet prescribed is delicately prepared and served.

SECT. 8. After passing through the halls and learning the condition of the patients early in the morning, the supervisors will very briefly report to the physicians any sickness or other fact demanding attention before these morning visits.

SECT. 9. Before the Sunday chapel service, and other occasions of public gathering, the supervisors will see that the patients are properly dressed for the occasion, and accompanied to the chapel by their attendants.

SECT. 10. The supervisors will report to the clerk the times of commencing and leaving off work on the part of the attendants employed in their respective departments.

SECT. 11. In general, the supervisors are expected to hold themselves in readiness to carry into practical effect the instructions of the superintendent, and to use all their personal influence in support of the spirit and design of these regulations.

ATTENDANTS.

SECTION 1. In all their intercourse with the patients, the attendants are required to treat them with respect and civility, to be kind and gentle in manner, and avoid roughness of every kind. They must answer, as far as they can, the civil questions of a patient, and attend to every reasonable request. They must be calm and quiet under provocation, never scold, threaten, or recriminate, and make every request in a respectful manner.

SECT. 2. In the care of the insane, sympathy, kindness, and tact should take the place of force and display of authority. But if at any time the use of force becomes a necessity, the *manner* of using it should take away its offensiveness; *and force* should never be resorted to without the presence of sufficient assistance to render a violent struggle unnecessary.

SECT. 3. A cheerful look, a kind manner, a respectful demeanor, and expressions of sympathy will do much to quiet the excited and give the attendant influence and easy control over patients, and render duty easy and agreeable.

SECT. 4. The opposition which the insane make often arises from delusions that lead them to believe they are to be injured in some way, and for this reason every effort to control them to administer food, medicine, or baths, or to do anything for them, should be made in the most kind and delicate manner, that their confidence may be secured and retained. On the other hand, cross words, angry looks, or violent acts destroy their confidence and diminish their chances of recovery. No one must risk the consequences of such measures.

SECT. 5. A blow or a kick is never to be inflicted on a patient by any employé under any circumstances. Any violation of this rule will be treated as a grave offence.

SECT. 6. Mechanical restraint should never be put on a patient without the authority of a medical officer.

SECT. 7. The attendant should be an example of good manners, avoiding all rude and ungentlemanly or unladylike

habits not suited to the well-ordered household. They should treat each other and all with civility and politeness, cherish a high sense of obligation, and never forget the golden rule, to do by others as, in changed circumstances, one would wish to be done by. By this simple means the attendant is sure to gain not only self-respect, but an easy control and personal influence.

SECT. 8. Attendants should hear with patience, and answer with caution; should never promise what cannot safely be performed, and having made a promise, be faithful in its execution.

SECT. 9. The peculiarities of patients must never be made a subject of sport and ridicule, but, rather, withheld from publicity, with tender regard for their feelings and welfare.

SECT. 10. The attendants must rise at the ringing of the morning bell, and at once commence the labors of the day. On opening the sleeping-rooms of the patients, they shall greet the occupants with expressions of kindness, see that they rise (if able), are properly dressed, washed, and prepared for breakfast at the appointed hour.

SECT. 11. As soon as practicable after the patients have arisen from bed, the attendants must see that the night vessels are removed from the rooms and the beds are thrown open for airing; and as soon as other duties will allow, they will remove all soiled bedding, and see that the beds are put in good order.

SECT. 12. Immediately after breakfast the halls and patients' rooms must be made clean and put in good order, and so kept at all times. Scrupulous care must be given to the water-closets, which will require frequent rinsing with hot water, and the use of disinfectants. The same care must be taken of the wash-bowls, and a sufficiency of clean towels must be at hand, as well as combs and brushes for the hair.

The attendants will follow the same rule of cleanliness in the care of the halls, windows, spaces, back-stairs, and dining-rooms, never being satisfied until they are as clean as

they can be made. Patients able and willing to assist in these labors are to be encouraged to do so, *but never compelled to work*. The attendants are held responsible for the complete execution of these requirements.

SECT. 13. The attendants will ever be watchful of the state of the atmosphere in the halls, and report to the office any evidence of impurity which is beyond their power to correct otherwise.

SECT. 14. The attendants must see that clean linen is put on each bed once in every week, and oftener if necessary; and if a sufficient supply of this or of towels is not at hand, the fact must be promptly reported to the supervisor.

SECT. 15. The attendants must see that the tables are properly laid, that everything about them is perfectly clean, and that they are made as inviting as practicable. During meals the attendants must always be present and wait on the table in a respectful and delicate manner, such as they would be willing to have adopted toward themselves under like circumstances. *Patients must not be hurried through their meals*, to hasten the clearing of the table. The attendants must use special care that no knife, fork, or other article is carried from the table by any patient.

SECT. 16. It is obviously improper for the attendants, after the hall work is done, to retire to their own rooms and leave the patients alone during hours of duty. Their time and attention are due to the patients, and must be devoted to keeping them quiet and tidy, preventing improper conduct of every sort, or lapsing into listlessness and torpor, to efforts to preserve their self-respect, and to carry into effect the general direction of the physicians. These ends are to be sought by efforts to keep patients occupied, either in work, reading, games, or judicious social intercourse.

SECT. 17. Visiting from hall to hall during hours of duty, without special business, or going away to other parts of the premises out of one's field of service, is wholly improper, and not allowed.

SECT. 18. The attendants are expected to know how every patient in their charge is employed, and to be vigilant, by every means in their power, to better the condition of every one.

SECT. 19. The attendants must not allow a patient to be taken from the halls by any one employed in other departments unless a general or special permission from a medical officer to that effect has been given; nor will the patients leave the halls before breakfast or on Sunday without the same permission.

SECT. 20. The attendants must always be alive to the welfare of those in their charge, and in the night hold themselves ready to arise and assist the night attendant if the condition of a patient requires it. They will come to the office for medicines or instructions when needed, and follow all directions carefully. After giving medicines, they should wash and return the glasses *at once*.

SECT. 21. If damage is done to buildings or property, by patients, the attendants will report it to their supervisor.

SECT. 22. The attendants are never to give up their keys except at the office, on leaving; nor are they ever to admit strangers into the halls without special permission.

SECT. 23. *The attendants will always take care that the clothing worn by patients is adapted to the season and the occasion. In case of sudden change from heat to cold, they must make at once the needed change in clothing.*

SECT. 24. It is particularly expected of attendants to see that every patient is cleanly in person, that the hair and nails are attended to, that any rent in clothing is properly mended, that the garments worn are kept buttoned or hooked, and that any stains from carelessness in eating are promptly removed. Each attendant should keep at hand a sponge and soap, and a small stock of sewing utensils, as needles, thread, buttons, hooks and eyes, etc., for immediate use when needed.

SECT. 25. When the physicians visit the halls, one of the attendants must be on hand to give any information required,

to accompany them to any patient's room, or render any other assistance needed.

SECT. 26. Each patient will take a warm bath each week, unless made an exception by direction of the physician. In particular cases of weakness or special delicacy, the sponge bath may be substituted for the tub. In such cases, as well as those who may desire to bathe more frequently, the attendants should apply to the attending physician for specific directions. The attendants must superintend the baths of patients, and not leave the halls with the bath-rooms open (unless exceptions are made); and in no case must an epileptic or suicidal patient bathe without the presence of an attendant.

SECT. 27. In suitable weather all patients who are able will go out for exercise, accompanied by their respective attendants, on such conditions as shall from time to time be prescribed. In these outdoor exercises the attendants must see that no one strays from the party, and so regulate the speed of walking or the character of other exercise as to suit, as well as may be, the average of persons present. They must try to avoid all appearance of restraint, and seek to make these occasions as enjoyable as possible. Preference should be given to walks within the asylum grounds; but when walks are taken into the city, it is not permitted to visit stores, hotels, railroad stations, or other public places, except by permission previously obtained.

In the airing-courts the same rules for the care of patients will be observed as apply to the halls. The attendants must not allow any rubbish to accumulate on the ground of the courts.

SECT. 28. The attendants must shave those patients who do not desire to wear a beard. In shaving, great care must be taken to have the razor in good order, and to shave easily and neatly. No other patient should be present; and the razors must be kept under lock and key in the attendant's room.

SECT. 29. The attendants, in their respective halls, will strictly observe the instructions of the superintendent in

regard to the time for the patient's retiring; and in assisting them to bed they must practice the same delicacy and courtesy enjoined elsewhere in these rules. Before closing the doors for the night they must see that the patients are comfortably in bed; *and it is especially enjoined* that they offer gentle and patient assistance to the feeble and aged, and leave all with a kind "good night."

NIGHT ATTENDANTS.

SECTION 1. The night attendants will visit the office at six o'clock in the evening, to receive their instructions for the night and go on duty at once. They will continue in charge of their respective sections of the house until after the ringing of the rising-bell, at the times established, after which they will be relieved by the attendants. They must be always awake, vigilant, and faithful, giving their whole attention to the condition of the house and patients. They must make their respective rounds, not hastily, thus leaving a large part of the time to be spent at the office, but dividing it between the various departments as directed. They must pass through the halls in the most quiet manner, being especially careful in opening and closing doors, and make the personal observations required with the most respectful delicacy, disturbing the patient as little as possible. They must be especially watchful of the sick, minister tenderly to their wants, carry out scrupulously all instructions in regard to them, and report to a physician any unfavorable change of condition. They must promptly attend to the call of patients, ascertain their wants, and satisfy them, if practicable. They must do all in their power to soothe and quiet any who may be wakeful or timid, and assure them of their safety.

SECT. 2. They must be especially vigilant in the care of those inclined to suicide or self-injury, and neglect no effort to be assured of the safety of such, in accordance with the specific directions they receive in each case.

SECT. 3. They must be always watchful in regard to fire; and, if it occurs, must at once, and in the most quiet manner,

inform the officers and employés, without a general alarm, and proceed to extinguish it. They must frequently inspect the attics of their respective departments, and see that the iron doors are kept shut. The safety, the comfort, and the lives of large numbers are intrusted, in a great measure, to the night attendants; and a degree of vigilance and faithfulness corresponding to the magnitude of the interests at stake is expected of them in the execution of all instructions given them.

SECT. 4. It is the imperative duty of the night attendants to report any irregularity or violation of the rules of the house which may come to their knowledge to the superintendent, and not to make the same a subject of remark elsewhere.

SECT. 5. During public services in the chapel on Sunday, and on other occasions, it is made the duty of the night attendants to look to the condition of the halls in the absence of the attendants.

COOK.

Under the direction of the matron, the cook will have the supervision of the work in the kitchen, the care of utensils, and of supplies of provisions within the kitchen premises.

The cook must see that the kitchen and all utensils are kept clean and in perfect order, that good order is preserved in the kitchen, and that each employé performs all duties assigned in a proper manner.

The cook shall see that all food is prepared as directed, is made palatable and inviting, and sent to the halls hot. Special care must be taken in preparing messes for the sick, that they are nicely cooked, and sent to the patients in acceptable form.

The cook shall report to the matron any instance of failure in duty or violation of the rules occurring in the department.

Persons employed elsewhere in the institution will not be allowed to loiter about the kitchen premises or bakery.

If any meat, butter, or other articles of food, of poor quality, are furnished for use, the head cook must promptly report it to the steward or superintendent.

BAKER.

The baker will see that the baking-room, oven, and all utensils belonging to his department are kept scrupulously clean at all times, that the house is kept supplied with the various kinds of bread prescribed, and he must keep his stock of bread sufficiently in advance of the demand that it may not be eaten absolutely new. On the mornings designated, he will make warm rolls or biscuit in season for breakfast.

It is his duty to report at once to the superintendent or steward any defect he may discover in the quality of the flour or other material for food furnished to his department.

PORTER.

The porter will have the whole charge of the food car, and will keep it always clean and in good order; will, at the appointed times, take the prepared meals from the kitchen to the several dumb-waiters, and deliver them to the attendants, who shall be present at the call of the slide-bell, assist the porter in running up the dumb-waiter, if necessary, and remove the meals carefully to the dining-rooms. In this, care must be taken by all that the food and utensils are handled gently, and that the meals reach the tables in good order. In like manner must the dishes and slops be received from the attendants by the porter, and by him be properly disposed of.

The porter will be responsible for keeping the basement and attics swept, and everything in its place. It is also his duty to fill the underbeds for the female attendants, great care being taken that the sacks be not soiled in the process. He will also remove the discarded beds each morning to the place designated. At the appointed times the porter will attend to the delivery of ice to the hall attendants and others, according to instructions of the superintendent. He will see that any object thrown from the windows during the night are removed promptly in the morning, and will hold himself ready to perform any item of duty required by the superintendent.

ENGINEER.

The engineer will be responsible for the good care of the boilers, engine, steam and water pumps, and all parts of the machinery, which must be kept in repair and in good running order. He shall promptly attend to the repairs needed in steam or water apparatus or other repairs or alterations assigned to him. It will be his duty to see that the boilers are properly fired, and the fuel used in the most economical and efficient manner. He will see that the radiators, air-chambers, and flues are properly adjusted for heat and ventilation, and that the amount of steam generated is wisely adapted to the state of the weather. It will be his duty in summer to attend to all needed alterations and repairs in steam-heating apparatus, preparatory to the demands of winter.

He must at all times be so thoroughly familiar with the location and condition of all hydrants, hose, or water-cocks provided for the extinguishing of fire, that he can put them in operation instantly, if needed. He will also be expected to hold himself in readiness to attend to any special duty required by the superintendent.

FARMER.

The head farmer will have the immediate supervision of the farm laborers, the laying out of the work, and the direction of the care and use of the stock and farming utensils; and all farm laborers will look to him for specific directions as to their duties.

It is his duty to see that all farm fences are kept in repair, and that everything on the farm and about the farm buildings is kept in perfect order, that the stock is well cared for, that every farmer performs his duty well, and that all material is properly and economically used. He will report to the clerk the time of service of each person in his department, and to the superintendent any fault or failure in duty on the part of any under his charge.

SUCCESSION OF OFFICERS.

TRUSTEES.

Commissioned.	Name.	Residence.
1840, June 20.	Daniel Abbott,	Nashua.
June 20.	Amos Twitchell,	Keene.
June 20.	Ichabod Bartlett,	Portsmouth.
June 20.	John Conant,	Jaffrey.
June 20.	Joseph Low,	Concord.
June 20.	Charles H. Peaslee,	Concord.
June 20.	Ira St. Clair,	Deerfield.
June 20.	Charles A. Cheever,	Portsmouth.
June 20.	John P. Hale,	Dover.
June 20.	Charles J. Fox,	Nashville.
June 20.	Samuel Swasey,	Haverhill.
June 20.	John S. Wells,	Lancaster.
1841, June 15.	Enos Stevens,	Charlestown.
June 15.	George W. Kittredge,	Newmarket.
June 15.	Joseph Low, reappointed,	Concord.
1843, June 19.	Moses Norris, Jr.,	Pittsfield.
June 19.	Ira St. Clair, reappointed,	Deerfield.
June 19.	Charles J. Fox, “	Nashville.
1845, June 30.	Abiel Walker, <i>vice</i> Joseph Low,	Concord.
June 30.	A. McFarland, <i>vice</i> G. W. Kittredge,	Meredith.
June 30.	Timothy Hall, <i>vice</i> Enos Stevens,	Keene.
June 30.	Luke Woodbury, <i>vice</i> C. J. Fox,	Antrim.
June 30.	William Plumer, Jr., <i>vice</i> S. E. Coues,	Epping.
Dec. 23.	James Farrington, <i>vice</i> A. McFarland,	Rochester.
1846, July 10.	Nathaniel S. Berry,	Hebron.
July 10.	George B. Upham,	Claremont.
July 10.	William Plumer,	Londonderry.

1847,	Aug. 9.	Jos. B. Walker, <i>vice</i> A. Walker,	Concord.
	Aug. 9.	Israel Hunt, Jr.,	Nashua.
	Aug. 9.	Warren Lovell,	Meredith.
	Aug. 9.	Thomas Shannon,	Moultonborough.
1848,	June 26.	William Plumer, reappointed,	Epping.
	June 26.	Franklin Pierce,	Concord.
	June 26.	R. Metcalf, <i>vice</i> G. B. Upham,	Newport.
	June 26.	Charles H. Peaslee, reappointed,	Concord.
1849,	July 3.	Joseph B. Walker,	Concord.
	July 3.	Joseph H. Smith,	Dover.
	July 3.	Amos A. Parker,	Fitzwilliam.
1850,	July 5.	Ralph Metcalf, reappointed,	Newport.
	July 5.	Isaac Ross, <i>vice</i> N. S. Berry,	Hanover.
	July 5.	David Pillsbury, <i>vice</i> William Plumer,	Chester.
1851,	July 4.	Charles Burroughs, <i>vice</i> T. Shannon,	Portsmouth.
	July 4.	Israel Hunt, reappointed,	Nashua.
	July 4.	Warren Lovell, “	Laconia.
1852,	June 19.	Franklin Pierce, “	Concord.
	June 19.	William Plumer, “	Epping.
	June 19.	Chas. H. Peaslee, “	Concord.
1853,	July 1.	Jos. B. Walker, “	Concord.
	July 1.	Joseph H. Smith, “	Dover.
	July 1.	Amos A. Parker, “	Fitzwilliam.
1854,	July 15.	Ralph Metcalf, “	Newport.
	July 15.	Samuel Herbert,	Rumney.
	July 15.	Enoch D. Yeaton,	Wakefield.
	Sept. 29.	J. A. Richardson, <i>vice</i> William Plumer,	Durham.
1855,	July 10.	Rufus Clement,	Concord.
	July 10.	Alvah Smith, <i>vice</i> Ralph Metcalf,	Lempster.
	July 10.	Charles Burroughs, reappointed,	Portsmouth.
1856,	Feb. 23.	Timothy Haynes, <i>vice</i> R. Clement,	Concord.
	July 11.	John Preston,	New Ipswich.
	July 11.	Charles H. Peaslee, reappointed,	Concord.
	June 30.	George B. Twitchell,	Keene.
1857,	June 30.	Joseph B. Walker, reappointed,	Concord.
	June 30.	John H. White,	Lancaster.
1858,	June 26.	Jeremiah F. Hall,	Wolfeborough.

1858,	June 26.	Ralph Metcalf, reappointed,	Newport.
	June 26.	Samuel Herbert, “	Rumney.
	Sept. 28.	Edward Wyman, <i>vice</i> R. Metcalf,	Newport.
	June 27.	Charles Burroughs, reappointed,	Portsmouth.
1859,	June 28.	Timothy Haynes, “	Concord.
	June 27.	Woodbury Melcher,	Gilford.
1860,	June 27.	J. A. Richardson, reappointed,	Durham.
	June 27.	Charles H. Peaslee, “	Concord.
	June 27.	John Preston, “	New Ipswich.
1861,	July 2.	Geo. B. Twitchell, “	Keene.
	July 2.	Joseph B. Walker, “	Concord.
	July 2.	John H. White, “	Lancaster.
1862,	July 2.	John Conant, “	Jaffrey.
	July 2.	Isaac Spalding,	Nashua.
	July 2.	Moses Clark,	Landaff.
1863,	June 29.	Charles W. Flanders,	Concord.
	June 29.	Charles Burroughs, reappointed,	Portsmouth.
	June 29.	Woodbury Melcher, “	Laconia.
1864,	July 7.	Charles H. Peaslee, “	Concord.
	July 7.	John Preston, “	New Ipswich.
	July 7.	William G. Perry,	Exeter.
1865,	July 16.	George B. Twitchell, reappointed,	Keene.
	July 16.	Joseph B. Walker, “	Concord.
	July 16.	Denison R. Burnham,	Plymouth.
1866,	June 22.	Charles A. Tufts,	Dover.
	June 22.	John Conant, reappointed,	Jaffrey.
	June 22.	Isaac Spalding, “	Nashua.
	Oct. 23.	Isaac Adams, <i>vice</i> C. H. Peaslee,	Sandwich.
1867,	June 19.	Charles Burroughs, reappointed,	Portsmouth.
	June 19.	Woodbury Melcher, “	Laconia.
	June 19.	Ebenezer S. Towle,	Concord.
1868,	April 13.	I. Goodwin, <i>vice</i> C. Burroughs,	Portsmouth.
	July 1.	Isaac Adams, reappointed,	Sandwich.
	July 1.	Waterman Smith,	Manchester.
	July 1.	Wm. G. Perry, reappointed,	Exeter.
	July 1.	Ebenezer S. Towle, “	Concord.
1869,	July 1.	Joseph B. Walker, reappointed,	Concord.
	July 1.	George B. Twitchell, “	Keene.
	July 1.	Denison R. Burnham, “	Plymouth.

1870,	Jan. 3.	John W. Sanborn, <i>vice</i> Isaac Adams,	Wakefield.
	July 8.	Isaac Spalding, reappointed,	Nashua.
	July 8.	Charles A. Tufts, “	Dover.
	July 8.	Dexter Richards,	Newport.
	Nov. 17.	Ellery A. Hibbard, <i>vice</i> W. Melcher,	Laconia.
1871,	Aug. 9.	Ellery A. Hibbard, reappointed,	Laconia.
	Aug. 9.	George W. Haven,	Portsmouth.
	Aug. 9.	Henry Colony,	Keene.
1872,	July 16.	Waterman Smith, reappointed,	Manchester.
	July 16.	William G. Perry, “	Exeter.
	July 16.	John W. Sanborn, “	Wakefield.
1873,	Oct. 23.	Joseph B. Walker, “	Concord.
	Oct. 23.	George B. Twitchell, “	Keene.
	Oct. 23.	Josiah Minot,	Concord.
1874,	July 8.	Isaac Spalding, reappointed,	Nashua.
	July 8.	Charles A. Tufts, “	Dover.
	July 8.	Dexter Richards, “	Newport.
1875,	July 26.	Ellery A. Hibbard, “	Laconia.
	July 26.	Charles H. Bell,	Exeter.
	July 26.	Albert Smith,	Peterborough.
1876,	June 22.	David Gillis,	Nashua.
	July 20.	William G. Perry, reappointed,	Exeter.
	July 20.	Waterman Smith, “	Manchester.
	July 20.	Joseph Burrows,	Plymouth.
	Aug. 10.	John V. Barron, <i>vice</i> J. Minot,	Concord.
1877,	Oct. 17.	Joseph B. Walker, reappointed,	Concord.
	Oct. 17.	George B. Twitchell, “	Keene.
	Oct. 17.	John V. Barron, “	Concord.
1878,	May 2.	John H. George, <i>vice</i> J. V. Barron,	Concord.
	May 2.	Carlton P. Frost, <i>vice</i> A. Smith,	Hanover.
	July 8.	Dexter Richards, reappointed,	Newport.
	July 8.	Charles A. Tufts, “	Dover.
	July 8.	David Gillis, “	Nashua.
1879,	July 30.	Ellery A. Hibbard, “	Laconia.
	July 30.	Jeremiah F. Hall,	Portsmouth.
	Aug. 14.	Carlton P. Frost, reappointed,	Hanover.
1880,	July 20.	William G. Perry, “	Exeter.

	July 20.	Waterman Smith, reappointed,	Manchester.
	July 20.	Joseph Burrows, “	Plymouth.
1881,	Oct. 12.	Joseph B. Walker, “	Concord.
	Oct. 12.	Geo. B. Twitchell, “	Keene.
	Oct. 12.	John H. George, “	Concord.
1882,	June 21.	Emery J. Randall,	Somersworth.
	June 21.	Frederick E. Potter,	Portsmouth.
	Sept. 22.	Dexter Richards, reappointed,	Newport.
1883,	April 26.	William H. H. Mason, <i>vice</i> J. Burrows,	Moultonborough.
	May 17.	Edward Spalding, <i>vice</i> F. E. Potter,	Nashua.
	Aug. 28.	Ellery A. Hibbard, reappointed,	Laconia.
	Aug. 28.	Carlton P. Frost, “	Hanover.
	Aug. 28.	Jeremiah F. Hall, “	Portsmouth.
1884,	July 25.	William G. Perry, “	Exeter.
	July 25.	Waterman Smith, “	Manchester.
	July 25.	Wm. H. H. Mason, “	Moultonborough.
1885,	Oct. 14.	Joseph B. Walker, “	Concord.
	Oct. 14.	George B. Twitchell, “	Keene.
	Oct. 14.	John H. George, “	Concord.
1886,	Sept. 9.	Dexter Richards, “	Newport.
	July 8.	Emery J. Randall, “	Somersworth.
	July 8.	Edward Spalding, “	Nashua.
1887,	Sept. 7.	Ellery A. Hibbard, “	Laconia.
	Sept. 7.	Carlton P. Frost, “	Hanover.
	Sept. 7.	Jeremiah F. Hall, “	Portsmouth.
1888,	Mar. 6.	John E. Barry, <i>vice</i> John H. George, deceased,	Concord.
	Mar. 6.	Franklin D. Ayer, <i>vice</i> J. F. Hall, deceased,	Concord.
	July 24.	William G. Perry, reappointed,	Exeter.
	July 24.	Waterman Smith, “	Manchester.
	July 24.	Wm. H. H. Mason, “	Moultonborough.
1889,	Oct. 14.	Joseph B. Walker,	Concord.
	Oct. 14.	George B. Twitchell,	Keene.
	Oct. 14.	John E. Barry,	Concord.
1890,	July 8.	Edward Spalding,	Nashua.
	July 8.	Dexter Richards,	Newport.
	July 8.	Morris Christie,	Antrim.

1891, Sept. 14.	Ellery A. Hibbard,	Laconia.
Sept. 14.	Carlton P. Frost,	Hanover.
Sept. 14.	Franklin D. Ayer,	Concord.
1892, April 5.	Charles A. Tufts, <i>vice</i> W. H. H. Mason, deceased,	
July 28.	William G. Perry.	
Sept. 17.	John C. French, <i>vice</i> Waterman Smith, deceased.	

PRESIDENTS.

John H. Steele	. . . . .	1839-1840
John Conant	. . . . .	1840-1846
George B. Upham	. . . . .	1847-1848
William Plumer	. . . . .	1848-1855
Charles Burroughs	. . . . .	1855-1868
Isaac Spalding	. . . . .	1868-1875
George B. Twitchell	. . . . .	1875-

SECRETARIES.

Dixie Crosby	. . . . .	1839-1841
Charles H. Peaslee	. . . . .	1841-1848
Joseph B. Walker	. . . . .	1848-

TREASURERS.

James Thorn	. . . . .	1839-1840
Joseph Low	. . . . .	1840-1846
John Atwood	. . . . .	1846-1847
Andrew McFarland	. . . . .	1847-1852
John E. Tyler	. . . . .	1852-1857
Jesse P. Bancroft	. . . . .	1857-1890
Charles P. Bancroft	. . . . .	1890-

SUPERINTENDENTS.

George Chandler	. . . . .	1842-1845
Andrew McFarland	. . . . .	1845-1852
John E. Tyler	. . . . .	1852-1857
Jesse P. Bancroft	. . . . .	1857-1882
Charles P. Bancroft	. . . . .	1882-

THIRD ANNUAL REPORT
OF THE
BOARD OF
COMMISSIONERS OF LUNACY

FOR THE
STATE OF NEW HAMPSHIRE

FOR THE FISCAL YEAR ENDING
SEPTEMBER 30, 1892.

VOLUME I, PART III.

CONCORD:
IRA C. EVANS, PUBLIC PRINTER.
1892.

STATE OF NEW HAMPSHIRE.

OFFICE OF THE COMMISSIONERS OF LUNACY,
STATE HOUSE, October 1, 1892.

*To His Excellency the Governor and the Honorable
Council:*

In conformity with the laws of the State of New Hampshire, I have the honor to present herewith the Third Annual Report of the Board of Commissioners of Lunacy, for the fiscal year ending September 30, 1892.

Respectfully submitted.

Irving A. Watson
Secretary.

MEMBERS OF THE BOARD.

Gov. JOHN B. SMITH . . . Hillsborough.
ATT'Y GEN. E. G. EASTMAN . . Exeter.
HON. JAMES A. WESTON . . . Manchester.
G. P. CONN, M. D., *President* . . Concord.
JOHN J. BERRY, M. D. . . . Portsmouth.
IRVING A. WATSON, M. D., *Secretary* Concord.

REPORT.

The third annual report of the Board of Commissioners of Lunacy herewith presented gives the commitments, discharges, and deaths returned to the board from the New Hampshire Asylum for the Insane, the several county almshouses or asylums, together with some statistical tables relating to the insane, for the year ending September, 1892.

The only institution in the State which offers remedial treatment for the insane is the New Hampshire Asylum for the Insane. The several county institutions are nothing more than places of detention for the so called chronic insane, and most of them are almost wholly lacking the essentials of a first-class institution. The record of these institutions may be found in the annual reports of the State Board of Health.

The Board of Commissioners of Lunacy has the power to transfer insane paupers or indigent insane persons from the county institutions or from their homes to the state asylum for remedial treatment, but can continue them at that institution only as long as in the judgment of the board it is necessary solely for remedial treatment.

While the law requires the Commissioners of Lunacy to "visit and make thorough inspections of all the asylums and other institutions for insane persons in the State," it does not give them any power whatever to remedy any defects they may find. Therefore the law, as far as any results are concerned, upon this point is entirely inoperative, and renders the inspections little less than a farce.

The result of that portion of the law which provides for the remedial treatment of the pauper and indigent insane, is

most gratifying. Under its provisions there have been many recoveries, aside from a large number of cases permanently improved. That portion of the Public Statutes which embraces the duties and powers of the Commissioners of Lunacy is included in the following sections of chapter 10:

SECTION 33. The commission, by one or more of their members, shall, without previous notice, visit and make thorough inspections of all asylums and other institutions for insane persons in the state, as often as once in four months. They shall examine into the care and treatment of the insane, the sanitary condition of each asylum or institution, and all other matters relating to the general welfare of the inmates. They may order the removal of any indigent insane person to the New Hampshire Asylum for the Insane for remedial treatment, and such person while under such treatment shall be supported at the expense of the state. When the need of such treatment shall cease, the commission shall so notify the county, town, or relative liable for the support of such inmate, and if he is longer continued at the asylum it shall be at the expense of such county, town, or relative.

SECT. 34. The commission shall keep a correct record of the number of commitments, discharges, and deaths at each asylum, institution, or other place of detention, and of the age, sex, and nationality of each person committed, discharged, or deceased, and shall report the same annually to the Governor and Council, with any other matters or recommendations which in their judgment are important.

SECT. 35. The superintendent of every asylum or other place in this state where insane persons are confined, shall, within three days after the commitment thereto of any person, notify the commission thereof, upon blanks furnished for that purpose; and the said superintendent shall at all times furnish to the board such information regarding the insane in his charge as they may request.

COMMITMENTS.

TABLE No. 1. — COMMITMENTS.

Persons committed to the New Hampshire Asylum for the Insane during the year ending September 30, 1892.

NAMES.	AGE, SEX, AND CONDITION.				Nationality.	Date of Commitment.	Where from.
	Years.	Male.	Female.	Color.			
Abbie Odell	57	.....	F.	W.	American	Oct. 2, 1891	Gilford.
Lizzie M. Morrill	34	.....	.....	.....	.....	3, "	Canterbury.
Charles H. Freeman	46	M.	.....	.....	"	6, "	Portsmouth.
Joseph LaPlante	17	.....	F.	.....	French Canadian.	21, "	Manchester.
Ida B. Libby	30	M.	.....	.....	American	22, "	Somersworth.
Edward Lynch	38	.....	.....	.....	.....	23, "	Laconia.
Samuel Shepard	66	.....	.....	.....	"	27, "	Manchester.
Mary E. Stevens	36	.....	F.	.....	"	2, "	Portsmouth.
Edward Plumer	35	M.	.....	.....	"	2, "	Concord.
George Carter	25	.....	.....	.....	"	4, "	East Wear.
Lizzie F. B. Marshall	24	M.	.....	.....	French Canadian.	4, "	Manchester.
Hermidas Benoit	23	.....	.....	.....	"	5, "	Bow.
Joseph Austin	51	.....	.....	.....	American	5, "	Gilford.
Sadie Harding	30	M.	F.	.....	.....	9, "	Manchester.
George Hamilton	57	.....	.....	.....	Irish	9, "	Concord.
Annie G. Mills	41	.....	F.	.....	American	10, "	Portsmouth.
Fannie Kenney	32	.....	.....	.....	.....	10, "	Nashua.
Samuel A. Balch	44	M.	.....	.....	"	12, "	West Stewartstown.
Susan P. Beede	37	.....	F.	.....	"	14, "	Freemont.
Mary E. Blodgett	29	.....	.....	.....	"	14, "	Nashua.
Eva Colburn	21	.....	.....	.....	"	16, "	Nashua.
Dennis Sullivan	28	M.	.....	.....	"	16, "	Portsmouth.
James Mitchell	76	.....	.....	.....	"	18, "	Manchester.
Manda A. Morrison	35	.....	.....	.....	"	20, "	Wilnot.
Ellen E. Heath	38	.....	F.	.....	"	21, "	Nashua.
Luella L. Freeto	36	.....	.....	.....	.....	21, "	Lebanon.
Albert Laundry	40	M.	.....	.....	Canadian	24, "	Lisbon.
Julia Pendexter	42	.....	F.	.....	Irish	24, "	Portsmouth.
John Fitzgerald	73	M.	.....	.....	.....	24, "	Lisbon.

Charles C. Smith.....	36	M.	F.	W.	Single.....	American.....	Dec.	30,	Campton.
Sarah E. P. Whidden.....	38	.....	.....	.....	Married.....	"	"	2,	Portsmouth.
Alice E. Holden.....	30	.....	"	.....	Divorced.....	"	"	3,	Temple.
Adaline A. Hunt.....	49	M.	.....	.....	.....	English.....	"	5,	Manchester.
Richard Deegan.....	27	"	.....	.....	Married.....	American.....	"	9,	Walpole.
Charles A. Jennings.....	31	.....	F.	.....	.....	.....	"	10,	Concord.
Mary Skinner.....	53	M.	.....	.....	"	"	"	14,	Nashua.
John W. Sturtevant.....	51	.....	F.	.....	.....	"	"	16,	Keene.
Frank J. Caswell.....	27	.....	F.	.....	Single.....	"	"	21,	Concord.
Mary J. Downs.....	73	.....	.....	.....	Widowed.....	"	"	22,	Dover.
Joseph Connolly.....	22	M.	.....	.....	Single.....	Irish.....	"	26,	Claremont.
Joseph F. Baker.....	25	.....	.....	.....	Divorced.....	American.....	"	29,	Pembroke.
Calvin H. Sargent.....	21	"	.....	.....	Single.....	.....	Jan.	2,	Concord.
Thomas J. Evans.....	26	"	.....	.....	"	Welshman.....	1892	5,	Milford.
Timothy J. Dooley.....	38	"	.....	.....	"	American.....	"	5,	Hartford, Ct.
Edward Forsaith.....	53	.....	.....	.....	"	.....	"	5,	Newport.
Emma T. Carey.....	65	.....	F.	.....	Married.....	"	"	6,	Dublin.
Mary E. Donaldson.....	22	.....	"	.....	Single.....	"	"	9,	Lebanon.
Albina Pecoy.....	47	M.	.....	.....	Widowed.....	"	"	12,	Goffstown.
Ludger Garyis.....	42	.....	.....	.....	Married.....	Canadian.....	"	12,	Manchester.
Frank A. Kiddler.....	21	.....	.....	.....	Single.....	American.....	"	18,	East Alstead.
Harriet Corliss.....	67	.....	F.	.....	Widowed.....	.....	"	27,	Londonberry.
Elbridge G. Sargent.....	62	M.	.....	.....	Married.....	"	Feb.	7,	Plymouth.
Mary E. Stevens.....	37	M.	F.	.....	"	"	"	7,	Manchester.
Joseph Stickney.....	83	M.	.....	.....	"	"	"	8,	Portsmouth.
Susie W. Hood.....	29	.....	F.	.....	"	"	"	10,	Nashua.
Joshua Johnson.....	54	M.	.....	.....	"	"	"	11,	Manchester.
Joseph Mitchell.....	37	.....	.....	.....	Single.....	Canadian.....	"	12,	Whitefield.
Persia Beal.....	83	"	.....	.....	Widowed.....	American.....	"	12,	Harrisville.
Samuel Heath.....	70	.....	F.	.....	Married.....	"	"	16,	Franklin.
Caroline W. Felch.....	56	M.	.....	.....	Single.....	"	"	17,	Belmont.
Thomas Pratt.....	31	.....	.....	.....	.....	"	"	19,	Walpole.
Joseph Connor.....	20	.....	.....	.....	.....	"	"	22,	Newmarket.
Mary M. Swasey.....	74	M.	F.	.....	Widowed.....	"	"	23,	Montpelier, Vt.
Lewis B. Jenness.....	22	.....	F.	.....	Single.....	"	"	24,	Nottingham.
Abbie Odell.....	58	.....	.....	.....	Married.....	"	"	25,	Lakeport.
Enoch Sauvageant.....	23	M.	.....	.....	Single.....	Canadian.....	Mar.	2,	Manchester.
Edna A. Pollard.....	18	.....	F.	.....	.....	American.....	"	4,	Newport.
Charles C. Smith.....	36	M.	.....	.....	"	"	"	4,	Campton.
George B. Brickett.....	21	"	.....	.....	"	"	"	7,	Auburn.
William Smart.....	17	.....	F.	.....	"	"	"	7,	Farmington.
Eliza Fagan.....	45	.....	.....	.....	.....	Irish.....	"	11,	Concord.
Mary J. Hastings.....	57	.....	.....	.....	Married.....	American.....	"	14,	Antrim.

TABLE No. 1. — COMMITMENTS. — *Continued.**Persons committed to the New Hampshire Asylum for the Insane during the year ending September 30, 1892.*

NAMES.	AGE, SEX, AND CONDITION.				Nationality.	Date of Commitment.	Where from.
	Years.	Male.	Female.	Color.	Single, Married, or Widowed.		
Odelie Fortier.....	21	M.	F.	W.	Married	Mar. 14, 1892	Rochester.
George N. Robinson.....	24	"	"	"	Single.	" 14, "	Concord.
Frederick L. Nourse.....	20	"	"	"	"	" 19, "	Amherst.
John F. Cann.....	23	"	"	"	"	" 25, "	Meriden, Nova Scotia.
Annie S. Whitney.....	48	"	F.	"	Divorced.	April 8, "	Laconia.
Catherine F. Aiken.....	56	"	"	"	Married	" 18, "	Keene.
Carrie S. Putney.....	34	"	"	"	"	" 18, "	Sutton.
Johanna Casey.....	32	"	"	"	Single.	" 18, "	Nashua.
Hope Lovell.....	40	"	"	"	"	" 18, "	Nashua.
Louisa Hills Grove.....	25	M.	F.	"	Married	" 19, "	Walpole.
Anna E. Wignin.....	41	"	"	"	"	" 19, "	Barnstead.
Hannah B. George.....	62	"	"	"	Widowed	" 22, "	Danbury.
Maggie Reid.....	42	"	"	"	Married	" 23, "	Manchester.
George W. Drake.....	74	M.	"	"	Widowed	" 26, "	Buckingham, Canada.
Mary G. Sylvester.....	40	M.	F.	"	Married	" 26, "	Concord.
Charles P. Rossiter.....	44	M.	"	"	"	" 28, "	Concord.
Ida F. Blaisdell.....	25	"	F.	"	Single.	" 28, "	Claremont.
Nathaniel H. Stowe.....	63	M.	"	"	Married	" 28, "	Great Falls.
Charles Chase.....	71	"	"	"	"	May 3, "	New Hampton.
Asa W. Hanson.....	73	"	"	"	"	" 4, "	Chester.
Theresa Moran.....	73	"	"	"	Widowed	" 5, "	Newton.
Helen M. Gould.....	47	"	F.	"	Married	" 6, "	Pentecook.
Annie Sullivan.....	60	"	"	"	Widowed	" 10, "	Colebrook.
Alice E. Adams.....	35	"	"	"	"	" 10, "	Nashua.
Frederick Bergeron.....	34	"	"	"	Married	" 14, "	Salem.
Mary Ball.....	42	M.	"	"	"	" 16, "	Manchester.
Frederick C. Hayes.....	35	M.	F.	"	Widowed	" 17, "	Somersworth.
Charles Hayes.....	33	"	"	"	Married	" 17, "	Harrisville.
Anna S. Goodwin.....	70	"	F.	"	Divorced	" 19, "	Dover.
	48	"	"	"	"	" 20, "	Dover.

T. J. Dooley.....	35	M.	"	Single.....	"	"	"	20,	Hartford, Conn.
Tytleston W. Atherton.....	51	"	"	Married.....	"	"	"	24,	Portsmouth.
Charles L. Barnard.....	23	"	"	Single.....	"	"	"	25,	Hopkinton.
Joseph Kolbert.....	31	"	"	Married.....	"	"	"	28,	Winchester.
Florence Sullivan.....	24	"	"	Single.....	"	"	"	28,	Manchester.
Welta C. J. Plummer.....	54	"	F.	Married.....	"	"	"	28,	Concord.
John Cassidy.....	40	M.	"	Single.....	"	"	"	30,	Dover.
Opilir Irena Warren.....	32	"	"	Married.....	"	"	"	30,	Nashua.
Andrew Lesick.....	22	M.	"	Single.....	"	"	"	31,	Hinsdale.
Joseph J. Quinlan.....	24	"	"	Single.....	"	"	"	31,	Somersworth.
Eliza M. Higgins.....	67	"	F.	Widowed.....	"	"	"	31,	Canterbury.
Emma P. Doble.....	38	"	"	Married.....	"	"	June	3,	Manchester.
John W. Sleeper.....	65	M.	"	Married.....	"	"	"	6,	Lakeport.
John W. Heath.....	53	"	"	Widowed.....	"	"	"	7,	Newton.
John Sullivan.....	27	"	"	Married.....	"	"	"	10,	Manchester.
Edward P. Farnum.....	57	"	"	Married.....	"	"	"	13,	East Concord.
Nancy Sleeper.....	70	"	"	Widowed.....	"	"	"	14,	Manchester.
Ange F. Lane.....	56	"	F.	Married.....	"	"	"	17,	Manchester.
Joseph S. Pierce.....	36	M.	"	"	"	"	"	24,	Colebrook.
Charles S. Coburn.....	59	"	"	Single.....	"	"	July	25,	Keene.
Lewis Brocklebanks.....	35	"	"	Married.....	"	"	"	1,	Plainfield.
Thomas Jameson.....	49	"	"	Single.....	"	"	"	2,	Portsmouth.
Addie Wallace.....	32	"	F.	Widowed.....	"	"	"	4,	Bethlehem.
Mary H. Perry.....	17	"	"	Married.....	"	"	"	6,	Columbia.
Joseph H. Stone.....	64	M.	"	Married.....	"	"	"	7,	Meredith.
Ellen J. Dunshee.....	48	"	F.	"	"	"	"	8,	Walpole.
Robert Sullivan.....	40	M.	"	Single.....	"	"	"	16,	Rollinsford.
Martha A. Stevens.....	55	"	F.	"	"	"	"	19,	Salem.
Ada E. Carr.....	18	"	"	"	"	"	"	22,	East Washington.
Clara Leavitt.....	39	"	"	"	"	"	"	25,	London.
Eliphalet G. Kimball.....	70	M.	"	"	"	"	"	27,	Wilmot.
Martha Miller.....	16	"	F.	"	"	"	"	27,	Manchester.
Bridget Madden.....	28	"	"	"	"	"	"	30,	Great Falls.
Nancy V. Chandler.....	46	"	"	Married.....	"	"	"	30,	Enfield.
Hannah B. Wright.....	38	"	"	Single.....	"	"	"	30,	Keene.
John F. Willey.....	61	M.	"	Married.....	"	"	"	30,	Newmarket.
Frank L. Newbegin.....	17	"	"	Single.....	"	"	"	31,	Kezar Falls, Me.
Julia M. S. Farley.....	45	"	F.	Married.....	"	"	Aug.	1,	New Boston.
Elvira Wheeler.....	76	"	"	Widowed.....	"	"	"	4,	Concord.
John Clifford.....	41	M.	"	Single.....	"	"	"	8,	Nashua.
Alfred Sargent.....	18	"	"	Married.....	"	"	"	8,	Keene.
Dudley F. Brown.....	45	"	"	Widowed.....	"	"	"	11,	Kensington.
Sarah H. Potter.....	35	"	F.	Married.....	"	"	"	15,	East Concord.
Adelina V. Boucher.....	32	"	"	"	"	"	"	18,	Littleton.

TABLE NO. 1. — COMMITMENTS. — Continued.

Persons committed to the New Hampshire Asylum for the Insane during the year ending September 30, 1892.

NAMES.	AGE, SEX, AND CONDITION.				Nationality.	Date of Commitment.	Where from.
	Years.	Male.	Female.	Color.			
Kneeland X. Codman	43	M.	.....	W.	American	Aug. 20, 1892	Nashua.
William H. Bryant	40	"	.....	"	" . . . . .	" 25, "	Salent.
William Maher	49	"	.....	"	" . . . . .	" 25, "	Penacook.
Emma A. Ordway	30	"	F.	"	"	" 26, "	Manchester.
Louisa F. Johnson	32	"	"	"	"	" 26, "	Concord.
Sophia M. Waters	74	"	"	"	"	" 30, "	Fitzwilliam.
Jennie S. Nelson	24	"	"	"	"	" 31, "	Hanover.
Otis T. Hooper	51	M.	.....	"	" . . . . .	Sept. 15,	Gorham.
Abigail D. Hubbard	65	"	F.	"	"	" 7, "	Fitzwilliam.
Mary E. Clifford	42	"	"	"	"	" 9, "	Plymouth.
Fannie M. Downs	44	"	"	"	"	" 10, "	Milton.
Emily Erickson	22	"	"	"	Norwegian	" 12, "	Berlin Falls.
Lizzie E. Earle	36	"	"	"	American	" 16, "	Concord.
Angeline Norris	52	"	"	"	"	" 16, "	Keene.
Lydia C. Abbott	59	"	"	"	"	" 16, "	Lyme.
S. E. Merrill	56	"	"	"	"	" 16, "	Keene.
Sarah A. Ridgway	40	"	"	"	"	" 16, "	Rindge.
Annie W. Mason	52	"	"	"	English	" 19, "	Penacook.
Sarah E. P. Whidden	42	"	"	"	American	" 20, "	Keene.
Elizabeth McArthur	46	"	"	"	"	" 23, "	Newington.
Lavinia H. Drew	55	"	"	"	"	" 26, "	Dover.
Ida F. Abbott	38	"	"	"	"	" 27, "	Manchester.
Gracia J. Knight	60	"	"	"	"	" 28, "	Walpole.

Persons committed to the Rockingham County Asylum during the year ending September 30, 1892.

NAMES.	AGE, SEX, AND CONDITION.				Nationality.	Date of Commitment.	Where from.
	Years.	Male.	Female.	Color.	Single, Married, or Widowed.		
Rosco Littlefield	20	M.	...	W.	Single.....	Feb. 1, 1892	Portsmouth.
Carrie B. Saunders	20	...	F.	"	"	April 16, "	Concord Asylum.
Charles E. Ford	23	M.	...	"	"	June 23, "	Candia.
Fred Utender	33	...	F.	C.	French	July 6, "	Epping.
Sarah Waterman	62	...	F.	W.	Widowed ..	July 10, "	Derry.
Edward Buttman	45	M.	...	"	Single.....	Sept. 5, "	Epping.

TABLE No. 1. — COMMITMENTS. — *Continued.*
Persons committed to the Strafford County Asylum during the year ending September 30, 1892.

NAMES.	AGE, SEX, AND CONDITION.				Nationality.	Date of Commitment.	Where from.
	Years.	Male.	Female.	Color.	Single, Married, or Widowed.		
Nathaniel Foss.....	40	M.			Married....	Oct. 16, 1891	Dover.
Mary Liby.....	65		F.	W.	"	" 21, "	"
Mary Coghney.....	40		"	"	"	" 28, "	"
Ira B. Libbey.....	30		"	"	Single....	Jan. 19, 1892	Somersworth.
Bridget Madden.....	27		"	"	"	Feb. 25, "	"
James Grimes.....	58	M.		"	Married....	Mar. 14, "	"
Samuel H. Caldwell.....	39	"		"	"	" 22, "	Dover.
Mary Erwin.....	60		F.	"	Single....	June 18, "	Concord.
Susan A. Hurd.....	62		"	"	Married....	" 28, "	Dover.
Mary Maloney.....	50		"	"	"	July 12, "	Rochester.
Isaac Nute.....	83	M.		"	Single....	June 18, "	Dover.
Arthur Mack.....	27			"	"	Aug. 11, "	"

Persons committed to the Belknap County Almshouse during the year ending September 30, 1892.

NAMES.	AGE, SEX, AND CONDITION.					Nationality.	Date of Commitment.	Where from.
	Years.	Male.	Female.	Color.	Single, Married, or Widowed.			
John H. Sleeper	60	M.	.....	W.	Married	American	Sept. 7, 1892	Gilford.
William Easter	71	"	.....	"	Widowed	"	" 7, "	"
George W. Farrar	42	"	.....	"	" .....	American	" 7, "	Sanbornton.
Charles J. Donovan	35	"	.....	"	Single	Irish	" 7, "	Alton.

Persons committed to the Carroll County Almshouse during the year ending September 30, 1892.

NAMES.	AGE, SEX, AND CONDITION.					Nationality.	Date of Commitment.	Where from.
	Years.	Male.	Female.	Color.	Single, Married, or Widowed.			
Charles Goldsmith	40	M.	.....	W.	Single	American	June 15, 1892	N. H. Insane Asylum.

TABLE No. 1. — COMMITMENTS. — *Continued.*
Persons committed to the Merrimack County Asylum during the year ending September 30, 1892.

NAMES.	AGE, SEX, AND CONDITION.				Nationality.	Date of Commitment.	Where from.
	Years.	Male.	Female.	Color.	Single, Married, or Widowed.		
John Webb	29	M.	.....	B.	Married	Nov. 14, 1891	Warner.
Philus Varville	55	"	.....	W.	.....	Dec. 29, " 1892	Allenstown.
William K. Solon	32	"	.....	"	Single	July 2, " "	Hooksett.
Margaret Hoey	25	F.	F.	"	.....	Aug. 11, " "	Boscawen.
Alfred Dearborn	79	M.	.....	"	American	" 11, " "	London.
Mary Dearborn	78	"	F.	"	"	Sept. 30, " "	Pittsfield.
Lavinia Leavitt	68	.....	.....	.....	.....	.....	.....

Persons committed to the Hillsborough County Asylum during the year ending September 30, 1892.

NAMES.	AGE, SEX, AND CONDITION.				Nationality.	Date of Commitment.	Where from.
	Years.	Male.	Female.	Color.	Single, Married, or Widowed.		
Francis Cronin.....	38	M.	F.	W.	Married....	Oct. 8, 1891	Manchester.
John Sullivan.....	42	"	"	"	"	Dec. 19, "	Milford.
Augustus Gilbert.....	65	"	"	"	"	Jan. 7, 1892	Manchester.
Mrs. Joel Bergeron.....	40	"	F.	"	Single....	June 7, "	Greenfield.
Clara Holt.....	25	"	"	"	Married....	July 26, "	Nashua.
Mary B. Wright.....	50	"	"	"	"	Aug. 29, "	Greenville.
John Shurtley.....	26	M.	"	"	"	"	"

Persons committed to the Cheshire County Asylum during the year ending September 30, 1892.

NAMES.	AGE, SEX, AND CONDITION.				Nationality.	Date of Commitment.	Where from.
	Years.	Male.	Female.	Color.	Single, Married, or Widowed.		
Tence Lasake.....	22	M.	"	W.	Single....	May 19, 1892	Hinsdale.
Alex. Ellery Vann.....	23	"	"	"	"	Sept. 12, "	Troy.
Susan E. Smith.....	40	"	F.	"	Married....	Oct. 13, "	Keene.

TABLE No. 1. — COMMITMENTS. — *Continued.**Persons committed to the Sullivan County Asylum during the year ending September 30, 1892.*

NAMES.	AGE, SEX, AND CONDITION.				Nationality.	Date of Commitment.	Where from.
	Years.	Male.	Female.	Single, Married, or Widowed.			
Amanda Alexander	53	.....	F.	W. Married ...	American	June 14, 1892	Plainfield.

Persons committed to the Grafton County Asylum during the year ending September 30, 1892.

NAMES.	AGE, SEX, AND CONDITION.				Nationality.	Date of Commitment.	Where from.
	Years.	Male.	Female.	Single, Married, or Widowed.			
Adelaide Hoffman	50	.....	F.	Widowed ..	American	June 30, 1892	Lebanon, formerly from N. H. Asylum.
Adeline V. Boucher	32	.....	"	Married	French	Aug. 13, "	Littleton.
Mary E. Clifford	42	.....	"	Single	American	Sept. 3, "	Plymouth.

Persons committed to the Coos County Almshouse during the year ending September 30, 1892.

NAMES.	AGE, SEX, AND CONDITION.					Nationality.	Date of Commitment.	Where from.
	Years.	Male.	Female.	Color.	Single, Married, or Widowed.			
Mrs. A. C. Coburn	62	.....	.....	W.	Divorced...	American	Nov. 24, 1891	Lancaster.
Irving Noyes	33	.....	.....	"	Married....	"	April 7, 1892	"
Ida Saylor	32	.....	.....	F.	Single	"	July 9, "	Concord Asylum.

DISCHARGES.

TABLE No. 2. — DISCHARGES.

Persons discharged from the New Hampshire Asylum for the Insane during the year ending Sept. 30, 1892.

NAMES.	AGE, SEX, AND CONDITION.				Nationality.	Date of Discharge.	HOW LONG AT INSTITUTION.			Condition when Discharged.
	Years.	Male.	Female.	Color.	Single, Married, or Widowed.					
Joseph E. Bliss.....	20	M.			Single.....	Oct. 6, 1891	.....	1	Recovered from alcoholism.	
John Leary	40			W.	Married.....	8, "	.....	17	Recovered from alcoholism.	
Laura S. Brown	39		F.	"	"	10, "	.....	19	Much improved.	
Emma T. Carey	62		"	"	"	17, "	3	10	Recurrent recovery.	
Walter Drown.....	40	M.		"	"	17, "	1	9	Improved.	
Mary M. Otis	55		F.	"	"	19, "	1	17	Not improved.	
Annah E. Adams	41		"	"	Single.....	28, "	1	19	Recovered.	
Mary Kahao	40		"	"	Widowed	28, "	4	3	Improved.	
Lavinia B. Leavitt	66		"	"	Married	29, "	2	1	Recovered.	
Mae J. Chase.....	38		"	"	"	29, "	1	20	"	
Arthur Heeper	40	M.		"	Single.....	Nov. 2, "	11	10	Recovered from alcoholism.	
Edward Lynch	38			"	"	2, "	.....	6	Recovered.	
Edwina A. Sanborn	40		F.	"	Married	2, "	9	19	Recurrent recovery.	
Phena A. Boliannon.....	44		"	"	"	7, "	5	16	Recovered.	
Frank L. Blandsell	28	M.		"	Single.....	7, "	1	24	Not improved.	
Mary White	45		F.	"	"	10, "	1	20	Much improved.	
Robert T. Wilcox.....	20	M.		"	"	12, "	7	30	Recovered.	
Nellie Johnson.....	15		F.	"	Married	13, "	1	3	Much improved.	
John Webb	34	M.		B.	Widowed	14, "	6	11	Recovered.	
John Fitzpatrick.....	24		"	W.	Married	16, "	.....	19	"	
Lizzie F. B. Marshall	40		F.	"	Married	21, "	1	7	Recurrent recovery.	
Charles B. Corey	25	M.		"	Single.....	23, "	1	4	Improved.	
Maria Kimball	74		F.	"	Married	25, "	6	5	Recovered.	
Merrill L. Kendall	70	M.		"	Widowed	30, "	2	8	Not improved.	
Lizzie M. Morrill	34		F.	"	Married	Dec. 11, "	1	1	"	
Mary E. Blodgett.....	29		"	"	"	14, "	.....	22	"	
Charles L. Sherburne	20	M.		"	Single.....	14, "	1	5	"	

Eva Colburn.....	21	F.	"	Married.....	"	"	17, "	1	1	Recovered.
Mary Skinner.....	53	"	"	"	"	"	26, "	10	10	Much improved from morphine habit.
George C. Chase.....	40	M.	"	"	"	"	22, "	3	3	Recovered from alcoholism.
Mary R. Gage.....	27	F.	"	Single.....	"	"	23, "	9	22	Improved.
Mary E. Stevens.....	36	"	"	Married.....	American.....	"	24, "	1	28	"
Rose Standish Austin.....	29	"	"	Single.....	"	"	31, "	2	21	"
Calvin H. Sargent.....	21	M.	"	"	"	"	31, "	1	2	Recovered from acute alcohol poisoning.
Ida B. Libby.....	30	F.	"	"	"	Jan. 4, 1892	"	2	13	Not improved.
Mary Perry.....	16	"	"	"	"	"	6, "	5	2	Recovered.
Albert Laundry.....	40	M.	"	Married.....	Canadian.....	"	7, "	1	16	"
Julia Pendexter.....	42	F.	"	"	Irish.....	"	19, "	1	25	"
Charles C. Smith.....	36	M.	"	Single.....	American.....	"	21, "	1	21	Much improved.
Annie G. Mills.....	41	F.	"	Married.....	"	"	23, "	2	44	Improved.
Abbie Odell.....	57	"	"	"	"	"	30, "	3	28	Not improved.
Judges Garvis.....	42	M.	"	"	Canadian.....	Feb.	27, "	1	15	Not improved.
Edwin F. Robinson.....	27	"	"	Single.....	American.....	29, "	29, "	6	25	Not improved.
Mary A. Hawes.....	21	F.	"	"	"	Mar.	7, "	6	20	Not improved, Strafford county farm.
Samuel Codwell.....	36	M.	"	Married.....	English.....	22, "	"	3	22	Not improved.
Sarah E. P. Whidden.....	38	F.	"	"	American.....	"	24, "	5	20	Much improved.
Joseph Laplante.....	17	M.	"	Single.....	Canadian.....	"	26, "	3	23	Improved.
Alice E. Holden.....	30	F.	"	Married.....	American.....	"	26, "	5	8	Alcoholism.
Sarah A. Pevare.....	35	"	"	Single.....	"	April	30, "	2	26	Not improved.
T. J. Dooley.....	35	M.	"	"	"	"	1, "	11	15	Recovered.
Gracia J. Knight.....	59	F.	"	Married.....	"	"	2, "	1	4	"
Sarah J. Howard.....	45	"	"	"	Irish.....	"	4, "	6	16	Not improved.
George Hamilton.....	57	M.	"	"	American.....	"	11, "	3	10	Not improved.
John R. Prentiss.....	54	"	"	Single.....	Welshman.....	"	12, "	1	9	"
Thomas J. Evans.....	26	"	"	"	German.....	"	13, "	2	3	"
William Srebenicku.....	49	"	"	Widowed.....	American.....	"	16, "	1	10	Improved.
Irving Noyes.....	32	F.	"	Married.....	"	"	18, "	3	3	Much improved.
Caroline B. Saunders.....	17	"	"	Single.....	"	"	27, "	1	2	Recovered.
Catherine F. Aiken.....	56	"	"	Married.....	"	"	30, "	1	18	Improved.
Mary K. Wier.....	45	"	"	Single.....	"	"	2, "	23	18	Recovered from alcoholism.
Lewis B. Jenness.....	22	M.	"	"	"	"	6, "	5	2	Improved.
George H. Robinson.....	24	"	"	"	"	May	2, "	1	16	Recovered.
Jolanna Casey.....	32	F.	"	"	"	"	6, "	23	23	Improved.
Hope Lovell.....	40	M.	"	"	"	"	12, "	2	5	Improved.
Odelie Fortier.....	21	F.	"	Married.....	Canadian.....	"	19, "	1	2	Recovered.
Louisa Hills Grove.....	25	"	"	"	P. E. Islander.....	"	21, "	1	2	Recovered.

TABLE No. 2. — DISCHARGES. — Continued.

Persons discharged from the New Hampshire Asylum for the Insane during the year ending Sept. 30, 1892.

NAMES.	AGE, SEX, AND CONDITION.				Nationality.	Date of Discharge.	HOW LONG AT INSTITUTION.			Condition when Discharged.
	Years.	Male.	Female.	Color.			Years.	Mos.	Days.	
Helen M. Gould.....	60	M.	F.	W.	American.....	May 23, 1892	....	5	13	Not improved.
John W. Sturtevant.....	51	"	"	"	"	"	....	9	8	"
George E. Frye.....	26	"	"	"	"	"	1	10	11	"
George A. Jones.....	44	"	"	"	"	"	....	24	24	Recovered.
Clara E. Jones.....	17	"	F.	"	"	"	....	8	29	"
Mary J. Hastings.....	57	"	"	"	"	"	....	2	17	Improved.
Elbridge G. Sargent.....	62	M.	"	"	"	June 1, " "	....	3	27	Recovered.
John F. Cann.....	23	"	"	"	"	"	....	2	7	Much improved.
Sadie Harding.....	30	"	F.	"	"	"	....	6	27	Improved.
Carrie D. Hoyt.....	24	"	"	"	"	"	1	9	9	Not improved.
Sarah Whitney.....	60	"	"	"	"	"	....	2	2	Not insane.
Caroline W. Felch.....	56	"	"	"	"	"	....	3	17	Recovered.
Samuel J. Noyes.....	62	M.	"	"	"	"	2	2	7	Improved.
Teresa Moran.....	47	"	F.	"	English.....	"	....	1	3	Much improved.
John Southmayd.....	42	M.	"	"	American.....	"	1	7	23	Recovered.
Mary G. Sylvester.....	40	"	F.	"	"	"	....	1	18	Improved.
Emma P. Doble.....	38	"	"	"	"	"	....	5	12	Not improved.
Joseph F. Emis.....	44	M.	"	"	Azore Islander.	"	....	11	8	"
Tyler W. Atherton.....	51	"	"	"	American.....	"	....	23	23	Recovered from alcoholism.
William Smart.....	17	"	"	"	"	"	....	3	11	Recovered.
John Sullivan.....	27	"	"	"	"	"	....	8	8	Recovered from alcoholism.
Anthony Peters.....	33	"	"	"	"	"	....	10	17	Not improved.
J. Gurney Wares.....	28	"	"	"	"	"	3	2	21	"
Susan A. Hurl.....	42	"	"	"	"	"	1	1	27	Improved.
Susan P. Blunt.....	49	"	F.	"	"	"	....	3	9	"
Charles Goldsmith.....	35	"	"	"	"	"	....	2	14	"
Ulderic Bergeron.....	42	M.	"	"	Canadian.....	"	....	1	25	Not improved.
						"	....	1	14	Recovered.

Adelaide Hoffman	49	M.	F.	"	Widowed ..	American	"	July	30,	"	1	6	13	Not improved.
William H. Solan	24	"	"	"	Single	"	"	"	2,	"	...	10	1	Improved.
Margaret Hoey	25	"	F.	"	Married ..	"	"	"	2,	"	1	11	17	"
Margaret Hoey	26	"	"	"	Single	"	"	"	2,	"	2	8	15	Not improved.
Ida B. Saylor	29	"	"	"	Married ..	"	"	"	11,	"	1	9	17	Improved.
Florence A. Knight	34	"	"	"	"	"	"	"	18,	"	...	2	26	"
Anna E. Wignin	41	"	"	"	"	"	"	"	20,	"	...	2	27	"
Nathaniel H. Stowe	63	M.	"	"	"	"	"	"	23,	"	...	2	18	Much improved.
Charles S. Coburn	59	"	"	"	"	"	"	"	25,	"	...	5	15	Recovered from alco-
Susie W. Hood	29	M.	F.	"	"	"	"	"	29,	"	...	1	5	holism.
Joseph S. Pierce	36	"	"	"	"	"	"	"	"	"	...	1	18	Not improved.
Edward P. Farnum	57	"	"	"	Single	"	"	Aug.	1,	"	...	12	27	Much improved.
Daniel Gallagher	18	"	F.	"	"	"	"	"	3,	"	...	...	3	Not improved.
Hannah B. Wright	38	"	"	"	"	"	"	"	8,	"	...	2	18	Recovered from alco-
T. J. Dooley	35	M.	"	"	"	"	"	"	"	"	...	7	13	holism.
Joseph Connolly	22	"	"	"	Married ..	Irish	"	"	9,	"	...	7	13	Improved.
Emma T. Carey	65	"	F.	"	Widowed ..	American	"	"	12,	"	...	...	6	Recurrent recovery.
Elvira Wheeler	76	M.	"	"	Single	"	"	"	12,	"	...	...	8	Not improved.
Jane F. Sullivan	24	"	F.	"	Married ..	German	"	"	22,	"	1	4	4	Recovered.
Joseph Kohler	31	M.	"	"	"	American	"	"	22,	"	...	2	24	Not improved.
Kneeland X. Codman	43	"	"	"	"	"	"	"	29,	"	...	...	9	Recovered from alco-
Albina Pecoy	47	"	"	"	Widowed ..	"	"	"	29,	"	...	7	17	holism.
Hall Wilkins	31	"	"	"	Married ..	"	"	"	31,	"	...	15	4	Recovered.
Ellen Dunshee	48	"	F.	"	"	"	"	Sept.	6,	"	...	1	29	Not improved.
Eliza M. Higgins	67	"	"	"	Widowed ..	"	"	"	7,	"	...	3	6	Recovered.
John H. Sleeper	65	M.	"	"	Married ..	"	"	"	7,	"	...	3	1	"
Charles J. Donovan	19	"	"	"	Single	"	"	"	7,	"	11	2	16	Not improved.
George W. Farrar	40	"	"	"	Married ..	"	"	"	7,	"	3	1	2	"
William Easter	67	"	"	"	"	English	"	"	7,	"	4	6	8	"
S. E. Merrill	55	"	F.	"	Single	American	"	"	8,	"	...	11	10	Not insane.
Charles H. Hayes	39	M.	"	"	Married ..	"	"	"	8,	"	1	3	9	Not improved.
John Cassidy	40	"	"	"	Single	Irish	"	"	9,	"	...	1	3	Improved.
Thomas Buswell	66	"	"	"	Married ..	American	"	"	13,	"	1	...	2	Recovered.
Adelina V. Boucher	32	"	F.	"	"	Canadian	"	"	19,	"	...	1	1	Not improved.
Eliza Fagan	45	"	"	"	Single	Irish	"	"	30,	"	...	6	19	"

TABLE No. 2. — DISCHARGES. — *Continued.*
Persons discharged from the Rockingham County Asylum during the year ending September 30, 1892.

NAMES.	AGE, SEX, AND CONDITION.				Date of Discharge.	HOW LONG AT INSTITUTION.			Condition when Discharged.
	Years.	Male.	Female.	Single, Married, or Widowed.		Years.	Mos.	Days.	
Fred Letender.....	33	M.		Single.....	July 19, 1892	.....	.....	13	Good, able to work.
Rosco Littlefield.....	20	"		C. W.	Feb. 10, "	.....	.....	10	Bad.

Persons discharged from the Strafford County Asylum during the year ending September 30, 1892.

NAMES.	AGE, SEX, AND CONDITION.				Date of Discharge.	HOW LONG AT INSTITUTION.			Condition when Discharged.
	Years.	Male.	Female.	Single, Married, or Widowed.		Years.	Mos.	Days.	
Nathaniel Foss.....	40	M.		Married....	Oct. 5, 1891	.....	.....	.....
Robert Sullivan.....	38			Irish.....	Nov. 15, "	.....	.....	.....
Mattie Goodwin.....	38		F.	Single.....	May 19, 1892	.....	.....	.....
Ida B. Libbey.....	30		"	"	June 7, "	.....	.....	.....
James Grimes.....	58	M.		Married....	April 8, "	.....	.....	.....
Arthur Mack.....	27			Single.....	Aug. 11, "	.....	.....	.....
Bridget Madden.....	27		F.	"	July 7, "	.....	.....	.....

No discharges from Belknap and Carroll County Almshouses during the year ending September 30, 1892.

Persons discharged from the Merrimack County Asylum during the year ending September 30, 1892.

NAMES.	AGE, SEX, AND CONDITION.				Nationality.	Date of Discharge.	HOW LONG AT INSTITUTION.			Condition when Discharged.
	Years.	Male.	Female.	Color.			Single, Married, or Widowed.	Years.	Mos.		Days.
Philias Varville	35	M.	W.	Married ...	French Can. ...	Feb. 8, 1892	...	1	14	Improved.

Persons discharged from the Hillsborough County Asylum during the year ending September 30, 1892.

NAMES.	AGE, SEX, AND CONDITION.				Nationality.	Date of Discharge.	HOW LONG AT INSTITUTION.			Condition when Discharged.	
	Years.	Male.	Female.	Color.			Single, Married, or Widowed.	Years.	Mos.		Days.
Augustus Gilbert	65	M.	.....	W.	Married	American	Mar. 31, 1892	....	2	24	Nearly recovered.
Mrs. Joel Bergeron	40	.....	F.	"	"	French	Aug. 29, "	....	1	8	Recovered.
Clara Holt	25	.....	.....	"	Single	American	July 20, "	....	1	13	Not much improved.

TABLE No. 2. — DISCHARGES. — *Continued.**Persons discharged from the Cheshire County Asylum during the year ending September 30, 1892.*

NAMES.	AGE, SEX, AND CONDITION.				Nationality.	Date of Discharge.	HOW LONG AT INSTITUTION.			Condition when Discharged.
	Years.	Male.	Female.	Color.			Years.	Mos.	Days.	
Tenea Lasake.....	25	M.	.....	W.	Single	May 30, 1892	.....	.....	11	Mild.
Alex Ellery Venn ..	26	"	.....	"	Single	Oct. 27, "	.....	1	14	"

*No discharges from the Sullivan County Asylum during the year ending September 30, 1892.**Persons discharged from the Grafton County Asylum during the year ending September 30, 1892.*

NAMES.	AGE, SEX, AND CONDITION.				Nationality.	Date of Discharge.	HOW LONG AT INSTITUTION.			Condition when Discharged.
	Years.	Male.	Female.	Color.			Years.	Mos.	Days.	
Martha Johnson.....	44	.....	.....	.....	American	July 25, 1892	4	10	13	
Adeline V. Boucher ..	32	.....	.....	W.	French	Aug. 18, "	.....	.....	5	
Mary E. Cliftord.....	42	.....	.....	"	American	Sept. 9, "	.....	.....	6	

Persons discharged from the Coos County Almshouse during the year ending September 30, 1892.

NAMES.	AGE, SEX, AND CONDITION.				Nationality.	Date of Discharge.	HOW LONG AT INSTITUTION.			Condition when Discharged.	
	Years.	Male.	Female.	Color.			Single, Married, or Widowed.	Years.	Mos.		Days.
Henry Rich	M.	.....	W.	.....	American.....	June 20, 1892	11	8	....	No material change.

DEATHS.

TABLE No. 3. — DEATHS.

Persons who have died at the New Hampshire Asylum for the Insane during the year ending Sept. 30, 1892.

NAMES.	AGE, SEX, AND CONDITION.				Nationality.	Date of Death.	Cause of Death.
	Years.	Male.	Female.	Color.			
Milton W. Armstrong.	59	M.	.....	W.	American.	Oct. 7, 1891	Organic brain disease.
Joseph R. White.	48	"	.....	"	"	" 18, "	Exhaustion from acute mania.
Frank A. Flint.	30	"	.....	"	"	" 24, "	Stroke by hanging.
Samuel Steward.	66	"	.....	"	"	Nov. 4, "	Exhaustion from acute melancholia.
Jonathan S. Nichols.	80	"	.....	"	"	" 28, "	Exhaustion from senile dementia.
Bartham B. Ham.	42	"	.....	"	"	" 29, "	Paresis.
John Kelley.	46	"	.....	"	French Can.	Dec. 1, "	Organic brain disease.
James Mitchell.	76	"	.....	"	American.	" 4, "	Exhaustion from acute melancholia.
George Tilden.	52	"	.....	"	"	" 5, "	Paresis.
Dexter Warren.	74	"	.....	"	"	" 5, "	Exhaustion from senile dementia.
Ruel Kingsbury.	59	"	.....	"	"	" 6, "	Exhaustion from chronic dementia.
John Fitzgerald.	73	"	.....	"	"	" 7, "	Exhaustion from acute melancholia.
Ellen E. Heath.	38	"	F.	"	Irish.	" 7, "	Exhaustion from chronic dementia.
William Hayward.	60	M.	.....	"	American.	" 10, "	Influenza.
Franklin Fairbanks.	69	"	.....	"	"	" 11, "	Organic brain disease.
Daniel W. Emerson.	67	"	.....	"	"	" 20, "	Peritonitis.
Elizabeth Hove.	77	"	F.	"	"	" 23, "	Organic brain disease.
Cora L. Taylor.	36	"	"	"	"	" 25, "	" " " "
Susan Augusta Quarles.	57	"	"	"	"	" 26, "	" " " "
Franklin Scoble.	36	M.	.....	"	"	Jan. 21, 1892	" " " "
Martha A. Willard.	73	"	F.	"	"	" 23, "	" " " "
George H. Ellis.	58	M.	.....	"	"	" 26, "	" " " "
Dolly M. Tirrell.	51	"	F.	"	"	" 26, "	" " " "
Ira Knowlton.	75	M.	.....	"	"	Feb. 1, "	Exhaustion from chronic dementia.
Harriet Corliss.	67	"	F.	"	"	" 11, "	Exhaustion from acute mania.
Adaline E. Titus.	69	"	"	"	"	" 15, "	Asthma complicated with capillary bronchitis.
Clara E. Morse.	42	"	"	"	"	" 18, "	Influenza (La Grippe).
Zilphia Ellenwood.	86	"	"	"	"	Mar. 5, "	Organic brain disease.

70	M.	"	Widowed ..	"	"	5,	Capillary bronchitis.
73	F.	"	Married ..	"	"	15,	Exhaustion from dementia.
43	M.	"	Single ..	"	April	13,	Organic brain disease.
33	F.	"	"	"	May	10,	"
71	M.	"	Married ..	"	"	17,	Exhaustion from senile dementia.
65	F.	"	Single ..	"	"	20,	Organic brain disease.
74	M.	"	Widowed ..	"	"	23,	Exhaustion from senile dementia.
70	"	"	Married ..	"	"	30,	"
51	"	"	"	"	July	23,	Organic brain disease.
38	F.	"	"	"	"	29,	"
48	"	"	"	"	"	23,	"
36	"	"	Single ..	"	Aug.	11,	Cholera morbus.
87	"	"	Widowed ..	"	Sept.	26,	Organic brain disease.
36	"	"	"	Irish ..	"	28,	"
74	"	"	"	American ..	"	30,	Exhaustion from acute melancholia.

TABLE No. 3. — DEATHS. — *Continued.*
Persons who died at the Rockingham County Asylum during the year ending September 30, 1892.

NAMES.	AGE, SEX, AND CONDITION.				Nationality.	Date of Death.	Cause of Death.
	Years.	Male.	Female.	Color.	Single, Married, or Widowed.		
William Lawson.....	40	M.	.....	W.	Married.....	Nov. 20, 1891	Bright's disease.
Richard May.....	27	.....	.....	"	Single.....	April 26, 1892	Consumption.
Mary Hennessey.....	45	.....	F.	"	"	18, "	"
Mary J. Whittier.....	27	.....	"	"	"	July 3, "	Bright's disease.
Ellen Delicate.....	61	.....	"	"	"	16, "	Consumption.
Mary Waterman.....	62	.....	"	"	Widowed.....	Aug. 30, "	Dropsy.

Persons who died at the Strafford County Asylum during the year ending September 30, 1892.

NAMES.	AGE, SEX, AND CONDITION.				Nationality.	Date of Death.	Cause of Death.
	Years.	Male.	Female.	Color.	Single, Married, or Widowed.		
Nathaniel Foss.....	40	M.	.....	W.	Married.....	Mar. 22, 1892	Apoplexy.
Isaac Nute.....	83	"	.....	"	"	Aug. 5, "	"
Harriet Jones.....	57	"	F.	"	"	Sept. 6, "	Cancer.
Mary A. Hawkins.....	45	.....	.....	.....	Single.....	16, "	Consumption.

No deaths at the Belknap County Almshouse during the year ending September 30, 1892.

Persons who died at the Carroll County Almshouse during the year ending September 30, 1892.

NAMES.	AGE, SEX, AND CONDITION.				Nationality.	Date of Death.	Cause of Death.
	Years.	Male.	Female.	Color.	Single, Married, or Widowed.		
Laura Hutchins.....	39	.....	.....	.....	.....	June 22, 1892	Cancer in stomach.
John C. Durrell.....	76	M.	F.	W.	Single.....	Sept. 13, "	Heart failure.

TABLE No. 3. — DEATHS. — *Continued.*
Persons who died at the Merrimack County Asylum during the year ending September 30, 1892.

NAMES.	AGE, SEX, AND CONDITION.				Nationality.	Date of Death.	Cause of Death.
	Years.	Male.	Female.	Color.	Single, Married, or Widowed.		
Frank R. Fuller.....	75	M. ....	.....	W.	Widowed ..	Oct. 22, 1891	Exhaustion from chronic dementia.
Charlotte Roby	53	.....	F.	"	Single.....	Jan. 6, 1892	Phthisis.
Fred W. Cheney	39	M. ....	.....	"	Divorced...	Feb. 21, "	Exhaustion from chronic dementia.

Persons who died at the Hillsborough County Asylum during the year ending September 30, 1892.

NAMES.	AGE, SEX, AND CONDITION.				Nationality.	Date of Death.	Cause of Death.
	Years.	Male.	Female.	Color.	Single, Married, or Widowed.		
Orlantia Flagg	67	.....	F.	W.	Widowed ..	Dec. 1, 1891	Consumption.
John L. Smith	40	M. ....	.....	"	Married	" 29, "	Disease of brain.

Persons who died at the Cheshire County Asylum during the year ending September 30, 1892.

NAMES.	AGE, SEX, AND CONDITION.				Nationality.	Date of Death.	Cause of Death.
	Years.	Male.	Female.	Color.	Single, Married, or Widowed.		
Sarah Dickerson..... William Bolster	64	M.	F.	W. ..	Single.....	March 5, 1892 April 2, ..	La Grippe.

Persons who died at the Sullivan County Asylum during the year ending September 30, 1892.

NAMES.	AGE, SEX, AND CONDITION.				Nationality.	Date of Death.	Cause of Death.
	Years.	Male.	Female.	Color.	Single, Married, or Widowed.		
Hannah Weeks.	65	.....	F.	W. ..	Married	Feb. 6, 1892	Bright's disease.

TABLE No. 3. — DEATHS. — *Continued.**Persons who died at the Grafton County Asylum during the year ending September 30, 1892.*

NAMES.	AGE, SEX, AND CONDITION.				Nationality.	Date of Death.	Cause of Death.
	Years.	Male.	Female.	Color.	Single, Married, or Widowed.		
Holman Cooley	48	M.	.....	W.	Single.....	Jan. 28, 1892	Epilepsy.
Ephraim Worthen	55	.....	.....	"	" .....	Feb. 2, " "	Acute insanity.
Mary Richardson	68	.....	F.	"	"	Mar. 20, " "	Insanity.
Ellen Stewart.....	41	.....	.....	"	Married....	June 21, " "	Insanity.

Persons who died at the Coos County Almshouse during the year ending September 30, 1892.

NAMES.	AGE, SEX, AND CONDITION.				Nationality.	Date of Death.	Cause of Death.
	Years.	Male.	Female.	Color.	Single, Married, or Widowed.		
Hannah Boynton	71	.....	F.	W.	Widowed ..	Sept. 27, 1892	Old age.

MISCELLANEOUS.

TABLE No. 4.

Persons committed to the New Hampshire Asylum for the Insane by order of the Commissioners of Lunacy for Remedial Treatment, not including those whose complete record is given in former reports.

NAMES.	Where from.	Remedial Treatment at Asylum commenced.	Date of Discharge from Remedial Treatment.
Ida B. Saylor.....	Coös County.	Sept. 23, 1889	June 30, 1892
Edna Nichols.....	Sullivan "	Oct. 24, "	"
Sarah J. Crossfield.....	Cheshire "	Nov. 1, "	"
Frank L. Taintor.....	" "	" 1, "	Sept. 30, 1892
John A. Greenough.....	Merrimack "	" 1, "	"
Emeline J. Dunlap.....	" "	" 1, "	"
Arthur Hooper.....	Claremont.	" 7, "	Nov. 2, 1891
Sarah A. Cushing.....	Grafton County.	" 18, "	"
Frank Davis.....	" "	" 25, "	"
Caroline B. Sanders.....	Rockingham "	Jan. 4, 1890	Oct. 1, 1891
Charles Goldsmith.....	Carroll "	Mar. 5, "	June 30, 1892
John F. Cunningham.....	Rockingham "	" 13, "	"
James H. Bryant.....	Carroll "	June 2, "	Nov. 15, 1891
John W. Sanborn.....	" "	" 26, "	Oct. 20, 1892
Johanna Harrington.....	Manchester.	July 16, "	Nov. 15, 1891
John Webb.....	Merrimack County.	Aug. 5, "	" 15, "
J. Geneva Jebb.....	Cheshire "	Oct. 1, "	Sept. 30, 1891
Luther C. Wetherbee.....	" "	" 1, "	30, "
Susie D. Estes.....	Coös "	Nov. 13, "	"
Adelaide Hoffman.....	Grafton "	Dec. 17, "	June 30, 1892
Lydia Kimball.....	" "	" 17, "	"
Frank H. Nutter.....	Strafford "	Jan. 1, 1891	Oct. 20, 1892
Emma R. Gee.....	Sullivan "	" 1, "	"
Wilhelm Srebenrichm.....	Hillsborough "	Mar. 3, "	April 12, 1892
Armidas Daucouse.....	" "	" 3, "	"
Martha P. Leary.....	Carroll "	" 3, "	"
Nellie Johnson.....	Rockingham "	" 23, "	Nov. 13, 1891
Margaret Hoey.....	Merrimack "	April 1, "	June 30, 1892
Frank A. Flint.....	" "	" 9, "	Oct. 24, 1891
Jane F. Sullivan.....	Hillsborough "	" 14, "	Aug. 22, 1892
Susan A. Hurd.....	Strafford "	May 1, "	June 28, "
John Fitzpatrick.....	Rockingham "	" 5, "	Nov. 16, 1891
Ellen Lowe.....	Hillsborough "	" 23, "	April 15, 1892
Frank L. Blaisdell.....	" "	" 23, "	Nov. 7, 1891
Merrill L. Kendall.....	Sullivan "	" 25, "	Nov. 30, "
George F. McAllister.....	Carroll "	" 29, "	June 30, 1892
Mary Kahao.....	Grafton "	June 25, "	Oct. 27, 1891
Louisa T. Gurney.....	Rockingham "	July 1, "	"
Irving Noyes.....	Coös "	" 20, "	Mar. 31, 1892
Daniel W. Emerson.....	Soldiers' Home.	" 20, "	Dec. 21, 1891
Mary Perry.....	Coös County.	Aug. 4, "	Jan. 6, 1892
Walter R. Drown.....	Merrimack "	" 8, "	Oct. 17, 1891
Samuel Codwell.....	Strafford "	" 25, "	Mar. 31, 1892
George H. Breed.....	Sullivan "	" 27, "	"
William H. Solon.....	Merrimack "	" 31, "	July 2, 1892
Stephen A. Marston.....	" "	Sept. 1, "	"
Steph Badger.....	Strafford "	" 15, "	"
Patrick Morgan.....	" "	" 15, "	Sept. 25, 1892
Nellie Lehey.....	" "	" 15, "	June 28, "
Mary White.....	Hillsborough "	" 16, "	"
Sarah J. Howard.....	" "	Oct. 1, "	April 2, 1892
Stephen A. Marston.....	Merrimack "	Sept. 1, "	Nov. 22, "
George Carter.....	" "	Nov. 2, "	Oct. 20, "
Armidas Benoit.....	Hillsborough "	" 4, "	"

TABLE No. 4. — *Continued.*

Persons committed to the New Hampshire Asylum for the Insane by order of the Commissioners of Lunacy for Remedial Treatment, not including those whose complete record is given in former reports.

NAMES.	Where from.	Remedial Treatment at Asylum commenced.	Date of Discharge from Remedial Treatment.
George Hamilton	Hillsborough	Nov. 9, 1891	April 4, 1892
Ellen E. Heath	"	" 21, "	Dec. 10, 1891
Minda A. Morrison	Merrimack	" 20, "	"
Adelaide Hunt	Hillsborough	Dec. 4, "	June 30, 1892
Frank J. Caswell	Merrimack	" 21, "	"
Joseph Conley	Sullivan	" 26, "	Aug. 9, 1892
Mary Donaldson	Grafton	Jan. 9, 1892	"
Caroline W. Felch	Belknap	Feb. 17, "	June 4, 1892
Enoc Sauvageau	Hillsborough	Mar. 2, "	"
William Smart	Strafford	" 7, "	June 18, 1892
Odelie Fortier	"	" 14, "	May 19, "
George H. Robinson	Merrimack	" 14, "	" 2, "
John F. Cann	Sullivan	" 25, "	June 2, "
Sarah McCollister	Cheshire	April 1, "	"
Joseph Mitchell	Coos	" 1, "	"
Albina Pecoy	Hillsborough	" 1, "	Aug. 29, 1892
Ulderice Bergeron	"	May 16, "	June 30, "
Louisa Hillsgrove	Merrimack	April 19, "	May 21, "
Joshua Johnson	Hillsborough	May 11, "	"
Tenca Lasake	Cheshire	" 19, "	"
Florence Sullivan	Hillsborough	" 28, "	Oct. 20, 1892
Weltha C. J. Plummer	Merrimack	" 28, "	"
Joseph Kober	Cheshire	" 28, "	Aug. 22, 1892
Edward Plummer	Rockingham	July 1, "	"
Fannie C. Kenney	"	" 1, "	"
Charles H. Freeman	"	" 1, "	"
Joseph Stickney	"	" 1, "	"
Andrew Lesick	Cheshire	" 1, "	"
Mary H. Perry	Coos	" 4, "	"
Robert Sullivan	Strafford	" 8, "	"
Ada E. Carr	Sullivan	" 19, "	"
Clara Leavitt	Merrimack	" 22, "	"
Martha Miller	Hillsborough	" 27, "	"
Bridget Madden	Strafford	" 27, "	"
Nancy V. Chandler	Grafton	" 30, "	"
Alfred E. Sargent	Cheshire	Aug. 8, "	"
Dudley F. Brown	Rockingham	" 11, "	"
Adelina V. Boucher	Grafton	" 18, "	"
Kneeland X. Codman	Hillsborough	" 20, "	"
William H. Bryant	Rockingham	" 25, "	"
Mary E. Clifford	Grafton	Sept. 9, "	"
Elizabeth McArthur	Hillsborough	" 23, "	"

TABLE No. 5.

Persons who have been at the State Asylum twenty years or more and are now supported by the State under the provisions of section 7, chapter 18, Laws of 1889.

NAMES.	AGE, SEX, AND CONDITION.				Nationality.	Date of Commitment.	Where from.
	Years.	Male.	Female.	Color.	Single, Married, or Widowed.		
Mary Ann Kinnear.....	65	.....	.....	.....	Single.....	June 7, 1852	Newcastle.
Aaron W. Clark.....	60	M.....	F.....	W.....	".....	April 14, 1853	Atkinson.
William C. Snell.....	57	".....	".....	".....	".....	April 18, 1858	Bangor, Me.
Helen L. Cram.....	48	.....	F.....	".....	".....	July 7, 1864	Aeworth.
Frederick A. Lane.....	45	M.....	.....	".....	".....	May 16, 1866	Exeter.
Ellen M. Summers.....	47	.....	F.....	".....	Married.....	Jan. 21, 1867	Concord.
Zelia W. Clark.....	44	.....	".....	".....	Single.....	Feb. 16, 1870	Dover.
Juliette M. Fuller.....	35	.....	.....	".....	American.....	June 24, 1872	Walpole

TABLE No. 6.

Whole number of cases receiving remedial treatment by order of the board.....	46
Whole number of cases treated during the year	96
Whole number of cases discharged during the year.....	50
Committed for remedial treatment during the year ending September 30, 1892	46
Committed for remedial treatment during the year and discharged....	17
Remaining.....	29
Previously committed and remaining during the year.....	50
Previously committed and discharged during the year	33
Remaining.....	17
Whole number committed for remedial treatment to present time	185
Whole number discharged from remedial treatment to present time...	139
Whole number receiving remedial treatment at present time.....	46
Twenty-year cases taken by the State during the year.....	2
Twenty-year cases taken by the State previously.....	9
Total	11
Twenty-year cases deceased.....	3
Remaining.....	8

By order of this board there have been treated at the New Hampshire Asylum for the Insane to September 30, 1892, 185 patients. Of these 139 have been discharged, leaving 46 at the state asylum receiving remedial treatment. During the fiscal year covering this report there were committed to the state asylum 46 patients, of whom 17 have been discharged, leaving 29 now at the asylum.

TABLE No. 7.

CONDITION WHEN DISCHARGED.	Recovered.	Improved.	Unimproved.	Deceased.	Total.
Committed and discharged during the year	10	3	3	1	17
Percentage to number committed during the year	21.73	6.52	6.52	2.17	36.95
Previously committed but discharged during the year	8	14	9	2	33
Total percentages	18.75	17.71	12.50	3.12	52.08

Table No. 7 shows the number and condition of those discharged from the asylum, out of the total number committed by the board to that institution for remedial treatment. The report for the year 1890 showed a recovery in eleven per cent of the patients; in 1891, 13.79 per cent; while for the present year it reaches 18.75. A still larger increase is shown in the number discharged as improved.

TABLE No. 8. — RECAPITULATION.

The following shows the number of commitments, discharges, and deaths at the institutions named, during the year ending September 30, 1892, also the number of inmates remaining at these institutions at the latter date, as shown by the records of the board:

	Inmates October 1, 1892.	Commitments dur- ing the year end- ing September 30, 1892.	Discharged.	Deaths.
New Hampshire Asylum for the Insane	357	169	129	43
Rockingham County Asylum	50	8	2	6
Strafford County Asylum	51	12	7	4
Belknap County Almshouse	9	4		
Carroll County Almshouse	14	1		2
Merrimack County Asylum	43	7	1	3
Hillsborough County Asylum	71	7	3	2
Cheshire County Asylum	20	3	2	2
Sullivan County Asylum	13	1		1
Grafton County Asylum	23	3	3	4
Cooks County Almshouse	19	3	1	1
Total for State	670	218	148	68



HON. MOSES HUMPHREY.

NEW HAMPSHIRE AGRICULTURE.

TWENTY-FIRST

ANNUAL REPORT

OF THE

BOARD OF AGRICULTURE

FROM

Nov. 1, 1891, TO Nov. 1, 1892.

By N. J. BACHELDER, SECRETARY.

CONCORD:

IRA C. EVANS, PUBLIC PRINTER.

1893.

BOARD OF AGRICULTURE.

ORGANIZED AUGUST 23, 1870.

MEMBERS.

MOSES HUMPHREY, <i>President</i>	Concord.
GEORGE S. PHILBRICK, <i>Vice-President</i>	Tilton.
JOHN D. LYMAN	Exeter.
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OSGOOD F. COVELL	Colebrook.
BELA GRAVES	Unity.

NAHUM J. BACHELDER, *Secretary*.

GENERAL REPORT.

OFFICE BOARD OF AGRICULTURE,
CONCORD, N. H., November 1, 1892.

To His Excellency the Governor:

The twenty-first annual report of the State Board of Agriculture, from November 1, 1891, to November 1, 1892, is herewith submitted.

According to the report of the State Board of Equalization for 1892, there are in the State 75,154 horses, 18,072 oxen, 109,144 cows, 39,502 other cattle, and 117,503 sheep. Compared with the report for the previous year, it shows a gain of 3,878 horses and a loss of 1,329 oxen, 3,562 cows, 7,325 other cattle, and 2,496 sheep. Stock growing is being superseded by fruit raising, market gardening, and the summer boarding industry.

A general review of the agricultural condition reveals no retrograde during the year, and in certain directions marked advancement has been made. The most powerful factor in advancing the interests of husbandry throughout the State is education, not necessarily obtained from text-books and college halls, but from the various agencies now permeating the entire agricultural population of New Hampshire. Practical lessons on practical subjects not only increase the farmer's fund of knowledge, but at the same time develop the reasoning powers and promote general intelligence.

The State Board of Agriculture have been interested in promoting this education in every practical way. Institutes have been held in the various counties, and practical instruction imparted along the lines of leading agricultural subjects.

In addition to home talent, the ablest agricultural workers in the country have been heard at these institutes on special subjects which have been their life study. We are able to report a good degree of interest manifested by the farmers in the localities where these gatherings have been held, and are convinced that much has been added thereby to the general educating influence before mentioned. Encouragement has been given to all farmers' organizations, and especially to the Grange, which has witnessed a year of unprecedented growth. Twenty-five Subordinate Granges have been organized during the year, and about fifteen hundred added to the membership. This organization is accomplishing great things in social, educational, and moral development among the rural classes of the State.

Efforts have been continued in advertising the natural attractions of New Hampshire and its advantages as a health and pleasure resort. The abandoned farms of the State have also been extensively advertised, and in both directions excellent results have followed. It would be for the interest of the State to increase the appropriation for this line of work.

The inspection of commercial fertilizers has been continued and the oleomargarine law enforced. No serious outbreak of any contagious or infectious disease has occurred during the year among the flocks and herds of the State, and through the vigorous means employed by the cattle commission much progress has been made in eradicating tuberculosis. An occasional case of cholera among swine and glanders among horses has been reported, and received prompt attention by the commission.

The Granite State Dairymen's Association continues to stimulate an interest in dairying in various ways, and is doing much for this leading farm industry.

The work of the agricultural college has been somewhat disturbed, owing to the preparations for removal to Durham. Much is expected of this institution when fairly established in its new location; and when fully equipped, as indicated by its benefactor, we believe the fullest expectations will be

realized. The agricultural experiment station has issued four bulletins during the year, which are printed in full in this report.

About the usual degree of success has attended the various agricultural fairs of the State. The Grange state fair has become one of the leading fairs of New England and a model in many respects.

A full report of the various matters here briefly mentioned will be found in this volume.

N. J. BACHELDER,
Secretary State Board of Agriculture.

INSTITUTES.

INSTITUTES.

COÖS COUNTY.

PITTSBURG AND STEWARTSTOWN.

The State Board of Agriculture held the first institute of the winter in Coös county, the sessions being held at Pittsburg and Stewartstown Hollow, November 11 and 12. The Board was represented by the venerable president, Hon. Moses Humphrey of Concord, Dr. Alonzo Towle of Freedom, Joseph B. Walker of Concord, F. P. Covell of Colebrook, and Secretary Bachelder. The trip from Colebrook was made by teams through Stewartstown and Clarksville, containing some of the finest farming and grazing land to be found in the State. Beef, cattle, horses, wool, and mutton are the chief products and the animals grazing upon the clean, smooth, undulating farms made an agricultural scene long to be remembered.

Pittsburg, famous as the scene of the "Indian Stream town War," is the most northern town in the State which has been settled, and borders upon the Connecticut river, the fine interval farms and adjacent lands having almost boundless capabilities when cleared and developed. The institute was held in the town hall and was presided over by Mr. Covell, the county member. President Humphrey was the first speaker and discussed the farmers' opportunities of to-day as compared with those of sixty years ago. He was able to bring to mind many interesting reminiscences of the earlier period in the social, educational, and business life of the farmer, which perhaps met the demands of that time, but when compared with

the advantages of the present day, not simply for accumulating property, but for educating and developing broad-minded men and women, fitting farmers to become leaders in all that makes life desirable, the advantages of the former period seemed insignificant. The old-fashioned spelling schools, apple-paring bees, husking parties, and other festivities are replaced by Grange meetings and farmers' institutes in which social pleasures are happily mingled with mind development.

In the methods of marketing, horse and ox teams have been supplanted by steam power and the trip which the speaker once made, driving five hundred turkeys from Croydon, N. H., to the Boston market, would hardly be expected to-day. Newspapers, magazines, and, above all, improved machinery have added many attractions to farm life and its popularity will increase in the future.

Dr. Towle followed upon the subject of "Horse Breeding for Profit." After referring to the constant demand for superior horses and the remunerative prices which they bring, the speaker said the farmers of that section were wise in giving so much attention to this industry. He would not advise breeding the heavier class of draft horses, for they, like beef cattle, can be more profitably grown in those sections of the country where cereals can be produced more cheaply. The horse for the New Hampshire farmer to breed is the gentleman's driving horse, for which the demand was never greater than to-day. This is a horse that will weigh not less than ten hundred pounds, of gentle disposition and soundness, and one that can trot a mile, if necessary, in two-thirty. A mare should be selected for breeding that will weigh from nine hundred to one thousand pounds, having pluck, endurance, and nerve force, as these qualities are more largely inherited from the dam. Her general make-up was described. In the sire should be had an animal of right proportions, of perfect disposition, and as much speed as can be afforded. Not only should he have a good record and pedigree, but should also have demonstrated his ability to transmit speed to his offspring by their performance upon the turf. By breeding to

such an animal there is a possibility of producing a record breaker that would bring a long price and if failing in this, the colt will sell for a gentleman's driving horse for all it has cost. Great care should be exercised that the mare while in foal be not subjected to sudden fright or accidents of any kind. She should be given frequent and regular exercise. The foal should be grown as rapidly as possible, consistent with health, and brought to early maturity. It should be fed skim-milk, oats, and early cut hay. It should be handled when very young and become accustomed to the harness gradually. Always have in mind that our business is raising horses—not keeping them after they are grown or cease to improve. Sell at the best price possible and raise another. Many farmers have been deluded with the idea of keeping colts until they have eaten up all the profit in raising.

At the evening session Secretary Bachelder, at the request of the audience, explained the work of the Grange, speaking of its origin, growth, and success in New Hampshire. The first Subordinate Grange in the State was organized at Exeter, August 19, 1873, and now we have 131 Granges with a membership of about 11,000, holding not less than 2,000 meetings annually. The influence in educating and elevating the farmer and his family by these frequent meetings and discussions could hardly be estimated.

Mr. Walker followed upon the subject of fertilization, speaking for an hour or more. Among other things he said that the chemical analysis of the crops grown upon our farms revealed the fact that certain elements were necessary for the growth of those crops, among the most important of which are nitrogen, phosphoric acid, and potash. In order to produce a maximum crop these elements must be had in abundance. The process of supplying these elements is called fertilization. The first source to which we naturally look is stable manure, but we are at once confronted with the fact that, even with the greatest care in saving and skill in applying, the supply is insufficient. The number of horses, cattle, sheep, and swine in the State is only about one half the num-

ber of tillable acres and it would be folly to expect the fertility to be sustained in this way. Muck is an excellent substitute, especially on dry soils. Its use in the stable and barnyard will make the manure in better condition for application to the soil. Spent lime from tanneries contains nearly one per cent of nitrogen and when this can be obtained it produces excellent results. Cultivation is one means of fertilization, letting in the heat, light, and air, rendering soluble the elements of fertility in the soil. Irrigation has been practiced in some sections and could be made available in many places in our State. On some soils ashes are a desirable fertilizer, and when the soil is deficient in potash, can be profitably used. The farmer is a manufacturer, the farm, stock, and implements being the capital stock, while the fertilizer and labor are important factors in the business. The expense for the latter should be reduced as much as possible by the use of improved machinery and substituting horse power for manual labor.

At the institute at Stewartstown on the following day the same programme was presented, except that the secretary spoke upon the summer-boarding industry.

At both places the speakers were asked numerous questions by the audience in regard to the subjects treated, manifesting a good degree of interest. The train for Concord was taken at Colebrook on the following morning, the representatives of the Board carrying with them a high appreciation of the agricultural resources of the Upper Coös region and a pleasing remembrance of the fifty-mile stage ride taken and entertainment provided in carrying out the institute work for this county.

CARROLL COUNTY.

OSSIPEE AND TAMWORTH.

The second in the series of farmers' institutes was held in Carroll county, November 18 and 19, with an attendance of about one hundred people. The sessions were held at Leigh-

ton's Corners in Ossipee and at Tamworth, the former being in a fine agricultural section and the latter famous as a summer resort in connection with its farming interests. Perhaps in no section of the State have more abandoned farms been recently purchased and improved as summer homes than in the Chocorua lake and mountain region of Tamworth. The hospitable citizens at Leighton's Corners met the representatives of the Board at North Wakefield, and otherwise manifested a deep interest in the work of the institute. Dr. Alonzo Towle of Freedom, the county member, presided, and introduced as the first speaker J. L. Gerrish, of Webster. The subject assigned Mr. Gerrish was, "Poultry and Egg Raising," which he discussed in a practical manner. After referring to the large increase in the business in recent years, and quoting statistics showing it to be one of the most important agricultural industries of the country, the speaker recommended that it be begun in a small way at first, increasing as circumstances would warrant. To conduct the business on a large scale successfully required great skill and incessant care. Would use movable houses, each suitable for flocks of twenty-five or less. Cleanliness is one of the essentials and it could be best secured in this manner. Nitrogenous foods should be given, and a properly balanced ration was as necessary as in feeding dairy stock. The morning feed should be bran and corn meal, with meat scraps added, and whole corn should be fed at night. Milk and vegetables should be given freely, and second crop clover and unthreshed grain are excellent. Give the fowls plenty of exercise and comfortably warm winter quarters. Fruit culture should be practiced in connection with the business, setting the land with pear, plum, and peach trees. The poultry will destroy the insects, resulting in the production of the best quality of fruit. The profits of the poultry business can be largely increased in this way.

Mr. T. D. Curtis, of Manchester, was introduced and discussed the "Advantages of Eastern over Western Farming" in the following manner :

ADVANTAGES OF EASTERN OVER WESTERN FARMING.

BY T. D. CURTIS.

No one place on the globe possesses all the advantages and disadvantages recognized by civilized man. Every country, section, state, and locality has its advantages and disadvantages. New England, as an old, leading, prosperous, and highly influential section of the Union, has hers. Other sections have theirs. What is called the "West" has its advantages and many disadvantages. Some of the latter will pass away as time rolls on, and others—some now unthought of—will arise.

The history of New England, to some extent, will be that of the West, modified by her surroundings and the advancing conditions of progress. In a measure, the history of the Old World will be that of the New. Flourishing places and cities will have their day, to go down and give others the lead. Many illustrations of this can already be pointed out. Cities of mushroom growth have sprung up in a day, and, like Winnipeg, gone down in an hour. Along the banks of the Mississippi river may be seen what were active and prosperous cities in the earlier days, when navigation was the principal mode of transportation, that are now dead and decaying towns, with grass-grown streets and tumble-down houses. The railroads have diverted business from their borders, and other places farther westward have sprung up to take their places in the march of trade. Each in its turn has had its boom, and some are booming still. But every boom must sooner or later die. It is always the next place on the westward march that possesses all the advantages beneath the sun. As section after section is thrown open for occupation there is a rush, a boom, and a cry of distress. The last was Oklahoma. When and where the next will be I am unable to declare; but Oklahoma, in this year of prosperity, is full of misery and sorrow.

There are many peculiarities of the West of which I might speak, and they would at least be interesting to you; but I

must hasten to speak more directly on the subject assigned to me, "Advantages of Eastern over Western Farming." Of course I shall have reference more particularly to pioneer farming.

There are two kinds of farming, known in these modern days as intensive and extensive farming. Intensive farming means putting your fertilizers and labor on a smaller area, and by thus enriching the soil and putting it in a higher state of cultivation, causing ten acres to produce as much as is ordinarily obtained from one hundred. Extensive farming means scattering your fertilizers and labor over a larger area, thus traveling over one hundred acres to get the products which might be obtained from ten acres. The latter is peculiarly the Western style of farming. This is the one that is practiced at first in all the Western States and territories. Of course there are exceptions in some of the older settled Western sections; but, as a general rule, we may truthfully say that extensive farming—skinning the surface and robbing the virgin soil—is the practice in the West. This kind of farming is too generally practiced in the East, but it was not at first possible to skim and rob the soil as is done in the West. It is partly a necessity with the Western people at first, and has been practiced largely under the mistaken idea that the fertility of the soil there is inexhaustible. But many, to their sorrow, have learned to the contrary.

Here in New England, where the land was covered by timber, this covering had to be removed by hard labor, and in removing it much potash and phosphoric acid was returned to the soil and served for a long time to support the natural fertility. The process of denuding the soil was necessarily as slow as it was laborious. But in time even this strong New England soil gives out under constant cropping without returning to it the ingredients taken from it.

In the West the tough, porous turf is at once turned over and sown to a crop, and constant cropping year after year follows, on the assumption that the soil is so deep that it will never give out. The farmer does not stop to think that how-

ever much fertility there is below him, he has no means of reaching and utilizing it. His labors are confined to the surface, which, except on the oak openings in some places, is porous and soon dries up in time of drouth, while the more he stirs the soil the more the fertility gets away from him by being washed beyond his reach. This soil on all the Western prairies and range lands is almost entirely made up of coarse vegetable matter and often has a sandy foundation. It has been a weak growth of vegetation burned by the Indians, leached by the rains, and baked by the sun, which expels the nitrogen for an unknown length of time. It grows wheat for a while, but soon runs out. Corn, which is largely carbonaceous, holds out much longer; but the soil is weak as compared with most of your naturally wooded New England land, which averages more corn to the acre, even now, than the best of the Western prairie soil. During the last decade New Hampshire averaged 32.8 bushels of corn per acre, while the general average for the United States was 24.1, Nebraska alone excelling us by .1 of a bushel. Every one of the New England states went over 30 bushels, while nearly all the other states went below.

You have a constant addition of mineral matter to the soil from your constantly crumbling boulders and hills, and their wash constantly adds to its fertility, while over large sections of the West not a sign of a stone can be found,—only the weak, dried-up surface of decayed grass stretching out before you from horizon to horizon. In your more enduring soil, your supply of stone and timber, and your clear, sweet streams of water forever guaranteed to you and your descendants, you have a heritage which every intelligent Westerner constantly longs for. He would idolize a mountain of stone, bow in reverence before your vast forests, and revel in your delicious, life-giving waters. The chance to plow long, straight furrows, and to travel over weary acres of surface, are but a poor recompense for the absence of water, a retentive soil, and perpetual supply of timber. Don't envy your brethren of the West because they live on level land, uncov-

ered with timber, void of stone, and supplied with brackish water from tortuous streams and shallow wells, or the gurglings of sulphurous liquids from costly artesian borings, and surrounded by a dreary landscape swept by the unbroken winds from the Rocky mountains, the Arctic ocean, or the tropic climes.

My friends, you have many things to be thankful for here in your New England homes, with your mountain scenery, your clear waters, your pure, bracing atmosphere, and an occasional breeze from the broad Atlantic. It is a place to flee to in summer, instead of a place to flee from; and in winter you are sheltered by your hills and mountains from the otherwise unbroken blasts from the Borean regions. Your forests are by no means waste lands; your mountains of granite, sandstone, marble, and limestone are everlasting barriers against a want of building material; your hillside springs and mountain streams are a never-failing supply of life-giving waters to the vegetable and animal kingdoms; and even your valleys of sand need but a supply of vegetable humus to outstrip anything in the West by way of productiveness.

The "Go West, young man," can do much better to stay right here in the midst of the oldest and highest civilization on the continent, where you have churches, schoolhouses, markets created by manufactures, and all the advantages that have been developed and accumulated during over two hundred and fifty years. We cannot say that the West lacks in intelligence, and yet, so far as most of its foreign-born population is concerned, this is true; but it does lack in many of the comforts, not to say necessities, of life. There are privations endured there of which you little dream, even where they whistle the loudest to keep up their courage and boom for dear life, in the hope of drawing others to them who will help them out in their suffering and make their lone lives more tolerable. Their long stretches of distance are a heavy tax on them, and these must continue for years until the population becomes more dense. There are flourishing cities and towns, but most of the villages are little more than loaf-

ing places; and when the farmers want to go anywhere, many of them have to make long drives to the railroad station, and railroad travel is expensive and often precarious. I think it was in the year 1882 that I was at Waumego, Kansas, and wanted to go to Manhattan, the location of the State Agricultural College. I had to sign a paper to the effect that I would not hold the railroad company for damages in case I was injured before they would sell me a ticket! This probably was an exceptional case; but the farther we go West, this side the Rockies, the more uncertain is railroading and everything else, even the character of the people.

The man who has money enough to go West with can do better to stay here in a civilized community, where few are badly in debt and none on the verge of destitution and starvation, than to spend it in railroad transportation westward, where money is scarce, the great majority are in need, and all have to "rustle" for a living,—many of them too poor to return East, although they are longing intensely to do so. There is little chance for aid, as few have a surplus to help others with, and the chances for getting remunerative employment are by no means as good as they are in the older and richer manufacturing communities. Few in the East have any adequate idea of what it is to be poor and destitute in the midst of a poverty-stricken people. A failure of the crops, one year after another, with no hope of getting a paying crop more than three years out of five, and maybe not more than two out of five, as in most cases beyond the Missouri river, is not a very inviting view to one who has tasted the bitterness of adversity. No man should take his family on to a wild farm in the West without ready money enough to keep them one full year and to buy the necessary team, farm machinery, implements, and household goods. Then he is liable to be from two to three years before he will get a paying crop, while his family is pinching and sighing in loneliness, sustained only by the hope that some day the "wilderness will blossom as the rose," and they become dwellers in the midst of a thriving and happy community.

Let him take one of New England's abandoned farms, use the money required for Western support and transportation thither, in purchasing fertilizers and making improvements on that farm, and he can be tolerably sure of a good living from the start, with no fear of having to join with his neighbors in making appeals to more prosperous communities for the means of keeping the wolf of hunger from devouring his family. In case total failure should overtake him, he will not find himself and family hundreds of miles away from any chance to earn a living by daily toil, but can in a few hours go to some thriving manufacturing town and get employment enough to buy food and shelter for his wife and little ones.

But all I have said thus far has been of a general character. Now let us be more specific, and briefly point out some of the industries for which New England is specially adapted. First, however, let us call attention to the fact that extensive farming, in the nature of things, cannot be very successful here in the East. To begin, the necessary extended areas of soil are lacking. This is not the place for immense ranches and ranges, but for prosperous, beautiful, and happy homes, where each may have his lovely cottage in the Valley of Content. And what can be more attractive than a thriving New England home?

Here is the place for intensive farming, — for growing rich by showing to mankind how to manage different soils and test the productive capacity of the acre. In doing this, one may select various specialties and indulge in great variety.

Dairying is one specialty that has been long successfully pursued in New England, and will continue to be pursued as long as mankind continue to freely consume milk, butter, and cheese. Butter is much more prominent than cheese, and I think should be, for no spot on earth can outrival your pure water and sweet grasses. They are important factors in the manufacture of fine and fancy butter, but not so essential in the manufacture of cheese, although they add to its fine flavor. Let those sections that grow the ranker and grosser herbage make the cheese, and you make the butter. Your

people are, by education and inheritance, butter makers. When I read the one hundred and twenty-one essays on butter-making, written mostly by women, that were sent to the "Mirror and Farmer" last spring, I felt indignant at the superior airs put on by Western self-appointed critics and teachers of dairying. These essay writers plainly understand the leading principles of butter-making, and betray a knowledge of all the so called "modern methods" and "advanced ideas," notwithstanding most of them are using old-fashioned machinery and implements, and even methods. Your soil, your surroundings, and your habits all tend to perpetuate the private dairy; and, so far as my observation goes, your private dairy butter averages in quality above the creamery butter of the West or of any other section. You have little or no need of the creamery, which was and is, to a great extent, a necessity in the West because of its large, foreign-born population having no knowledge of dairying, who were forced into it with others because of the failure of the wheat crop. They needed the education which the creamery has brought them. In making your own butter, you put so much the more of your labor into it and turn it to cash. What work is there on the farm which pays any better than that bestowed on the dairy—the setting of the milk, care of the cream, churning of the butter, and preparing it for market? Depend upon it, if you bestow the same skill on your butter product that others do, there is no section in the country that can excel you, creamery or no creamery.

As to markets, you have the best in the world,—New York, Boston, and your own manufacturing towns. You can easily beat all rivals. Besides, as time wears away, less and less butter will come from the West, for the reason that her consumption is increasing faster than her production, and her "cheap lands," which you have heard so much about, are disappearing. It is the force of habit and the greatest nonsense that Elgin or any other Western point should establish the price of dairy goods. Western predominance comes largely from the money interest of Eastern dealers in West-

ern creameries, which they are bound to boom; hence, a style of quotation which is no indication of quality, but designed to boom the creamery and discourage the private dairy.

In the matter of transportation, — if your railroads will not do you justice, it is your own fault. I hope to see the time when the people will take matters into their own hands, and own and run the railroads for the benefit of the community at large.

Again, Western corn and other feeds are becoming more and more in demand and valuable at home. The Western growers can't afford to sell them to you at prices which you can afford to pay; and the time is at hand when you must grow your own cattle food and largely, if not all, your own breadstuffs. At the same time you will sell less manufactures to the West. She is going into manufacturing as fast as she advances to a condition which enables her to do so. We are approaching, at a distance yet far away, the time when every section, state, and locality shall be comparatively self-supporting, and transportation will be reduced to the minimum. As a New England farmer, I would, as far as possible, produce my own breadstuffs, the food for my domestic animals, and make myself as independent as circumstances would permit. By this I would avoid unnecessary transportation and hauling to and fro, and avoid, to a large extent, being cheated and defrauded.

Where on earth can wool and mutton of a better quality be produced than right here among New England valleys and hills? Where can it be produced more cheaply? In what locality or region is the sheep more readily improved? Why, the very touch of New England soil and the enlivening effects of her waters at once set the sheep on the road of improvement. Compare the original Spanish Merino with the Vermont improved Merino. See from all parts of the world herdsmen come to New England for blood with which to keep up their herds!

Beef—where can better beef be grown than right here among these mountains and valleys? Time was when your

scrub stock was driven out of market by the Texas steer. Then followed the wild cattle from the plains, and latterly, came dressed beef from Chicago. But this business is beginning to play out. Texas steers have lost their attractions, the ranges of the plains are disappearing, and the "cattle kings" complain of hard times and no profits. Meantime, New England has dropped out of the beef market. But remember, times have changed—conditions have changed. Your scrubs have gone, and you are now growing as fine blooded animals as there are in the world, but not to the extent that you should. The best beef of the West is culled along the road, and we are wearing out our teeth chewing the tough carcasses that are left. Is it not possible that every farmer in New England can make a little money by growing choice beef for market? Let him grow his own raw materials, convert them into beef, and he will soon find that there is a paying demand for the New England product.

The late Col. John B. Clarke spent the last summer at Warner, and got his beef from a butcher who killed the native product. When he returned to Manchester and tackled the best Chicago dressed beef that could be found in the market, he could not eat it with any relish or satisfaction. He became an enthusiast on the subject of home-grown beef. I believe there is money for our farmers, as well as satisfaction for our citizens, in the production of choice beef—at least, enough for home consumption.

The horse is a prominent product of New England, and it has brought her much money. But her attention has been turned mainly to the production of animals for the turf and fast driving on the road. Would it not pay to breed more carriage horses and the lighter breeds for the farm? I have in my mind Cleveland Bays, the English Hackney, and the Belgian and the French Coaches. But whatever you breed, aim at something definite. Don't keep a scrub as a stallion, because he happens to have a handsome form. He will surely deceive those who want cheap service and put their trust in him. In the West, especially the far West and the

Northwest, they run largely to heavy draft horses. They are appropriate to the level prairies.

Of course, in conjunction with the dairy, the pig is indispensable, and at present prices there is money in making pork. Nobody can breed from any better blood, nor produce pork any cheaper, than the farmers of New England; and they are several hundred miles nearer the markets of the world than the Western farmer with his everlasting corn diet—often fed through the steer—and his hog cholera.

And poultry—why should not the hills and valleys be vocal with the cackle of hens and crowing of roosters? Who has any advantage in this direction? Look at the price of eggs and poultry, and the prices they have brought all through the summer! Surely there is pin money in poultry. Who has better facilities for carrying on the hen business, or better markets for disposing of the products, than the farmers and wives of New England?

Fruits grow in abundance here. Bees find a congenial clime in this mountain region. And what comes in more naturally, with all these comforts and luxuries,—your lakes, your streams, your mountain homes, and your coast watering places,—than the summer boarder? Then the quiet private homes, where the invalid, the tired wife from the city with her rollicking children, find health, rest, and unrestrained exercise, and are willing to pay liberally for it all. The West is a desert when compared with these things. She has some of them, in the older settled portions, and will have more in time; but this side the Rocky mountains she has no such mountain scenery and cool retreats in summer, nor such quiet, snug, and warm nooks in winter. Truly you ought to be proud of your homes and advantages, and ashamed of yourselves, if you do not enjoy them. They are far superior to going West and faring worse.

At the evening session A. J. Hamm, master of the Grange, presided, and Dr. Towle was the first speaker upon “Corn Growing.” He advocated intensive farming in all directions,

and specially in growing the corn crop. It is by this means that success has been attained in dairying, horse breeding, and all branches of agriculture. The corn plant is a native of our soil, but by judicious care in selection and with good cultivation its size, color, height, and time of maturity have been greatly improved. The variety to be grown is the largest that will fully mature. We should intensify the germination of the seed in the kernel by allowing it to stand until thoroughly mature, in order that it may give a stronger plant. Grow it on land adapted to corn culture and on land that can be worked by machinery. The practice of purchasing so much corn from the West was depreciated, and the farmers were urged to give more attention to corn growing. The soil must be fertilized liberally and thoroughly cultivated. Cultivation is one means of increasing fertility, as the nitrogen of the air will then be taken up by the soil. Labor is an expensive element in corn growing, and should be substituted by machinery. Would plow, plant, and cultivate by horse power. The corn plant may be still further bred towards perfection by intelligent care in selection and good culture.

Hon. John D. Lyman followed upon the subject of "Forestry." He urged the farmers to cut the mature trees, and so thin out the growing trees that the greatest possible amount of lumber would be produced on an acre. The right number of plants of any crop was better than too many or too few. The trees should be thinned by degrees, cutting a few at various intervals in their growth. The growing of pine timber was pronounced to be profitable under ordinary circumstances, but was doubly profitable when the trees were thinned as they should be. The trees cut in thinning would more than pay for the work, and the remaining trees would be much more valuable when the crop was fully grown.

Mrs. Alonzo Towle was present and made interesting remarks in regard to the Grange and other matters pertaining to the farm in which the ladies are specially interested.

The session at Tamworth on the following day was conducted with the same exercises and the addition of remarks

by W. W. Furbush, of Freedom, on general topics. Secretary Bachelder, who was unable to be at the previous session, was present and discussed the summer-boarding industry as specially connected with farming. Its profitableness was delineated, and the effect upon the financial prosperity of the State was shown by statistics. It affords the best of markets for farm and garden crops, and elevates the social standing of many rural communities. There is a constantly increasing demand for country board on the farm, and the business is capable of almost unlimited expansion. The social and educational influences of this industry are to be considered as well as the financial. Reference was made to the abandoned farm question, and its happy solution in the demand for summer homes.

This closed the advertised exercises; but in response to a request the objects and purposes of the Grange were explained by various speakers, and sufficient interest was manifested to warrant the organization of a Grange at an early day.

GRAFTON COUNTY.

GRAFTON AND LYME.

The Grafton county institute was held at Grafton Centre and Lyme, December 2 and 3, with a good attendance and interest. The session at the former place was held in Kemp's hall, and was called to order by Charles McDaniel, of Springfield, the county member. President Moses Humphrey was the first speaker upon "Farmers' Opportunities," and occupied an hour, to the satisfaction of the audience. The speaker emphasized the fact that with the practice of economy the farmers' opportunities were never better than to-day.

Chairman McDaniel followed upon the subject of "Sheep Husbandry." The address was of a practical nature and well received. The first essential for success in sheep husbandry is a love for the business. Select a breed adapted to

the locality, and care for them with great regularity. Protect them from the dogs, and feed liberally both summer and winter. Sheep should be kept in pasture with other stock, as they will eat the weeds and keep down the bushes. Feed skimmilk to young lambs, and grow them as rapidly as possible.

Many questions from the audience continued the discussion until the close of the session.

At the evening session President Humphrey presided, and introduced Dr. Alonzo Towle, of Freedom, who spoke for an hour on the subject of "Corn Growing." The methods of growing corn in the West were contrasted with those of New England, and the two systems classed as extensive and intensive agriculture. The latter is the only system that can be made profitable here. We must strive to produce larger crops on smaller areas. The most approved methods of planting, cultivating, harvesting, and feeding were discussed and the advantages of the silo strongly advocated.

The discussion of the subject was continued by President Humphrey and Mr. McDaniel, with numerous questions and remarks from the audience.

The session on the following day was held at Church hall, Lyme. Frank G. Whittemore, master of Morning Star Grange, called to order, and introduced President Humphrey as the permanent chairman. The subjects and lectures were similar to those on the previous day at Grafton, with a strong reinforcement by the presence of Hon. Joseph B. Walker, of Concord, whose address was on the subject of "Corn Growing."

Mr. McDaniel supplemented his address upon "Sheep Husbandry" with remarks upon the work of the Grange.

This session was one of the most satisfactory of the winter, and all were apparently well pleased and interested.

STRAFFORD COUNTY.

LEE AND DOVER.

The institute held at Lee, December 8, was called to order by B. Frank Davis, master of Jeremiah Smith Grange. Mr. J. L. Gerrish, of Webster, was introduced, and spoke upon the subject of "Poultry as an Easy and Profitable Source of Income," requiring but a comparatively small outlay in making a beginning or laying a good solid foundation for the business. In the midst of several flourishing manufacturing towns, there can be no question about a demand and market for fresh eggs and poultry. There is no obstacle in the soil of this section to the successful raising of poultry. It is a business in which outside help can be largely dispensed with, as the children of a family can be readily drawn in to assist in the work. Small and safe beginnings often grow to large dimensions, and become very profitable. It is very important to keep the quarters of poultry clean and free from vermin, and the proper saving of the manure is a source of fertility. Make the roosts low and easy to rest upon. Give plenty of room, so there will be no crowding. Farmers generally keep hens until they are too old for profit. It is better, as a rule, to dispose of hens at the age of two years and supply their places with pullets. The speaker thought that in this section more money can be made on eggs than by making poultry for market the leading feature of the business. If poultry is required, the larger breeds should be the main reliance; but if eggs are the principal object, then take the smaller and livelier ones, as they are the better layers. But a good supply of eggs cannot be reasonably expected unless the conditions are favorable. A hen that is moulting, or one that has already been exhausted by laying, need not be expected to lay eggs. Hens must be made comfortable, so that they will go singing around the coop and yard; and the food must be of a rather nitrogenous and egg-producing kind. The hen's system cannot produce something from nothing.

Hens must also be kept scratching and active, lest they get fat and lazy; nor must too much corn or other heat and fat-producing food be given, lest the hen's system be clogged with fat, and eggs thus be made out of the question.

Mr. T. D. Curtis, of Manchester, was the next speaker upon the "Economical Production of Milk." He said the subject is a broad one, involving the farm, the herd, the barn and dairy buildings, and the feed and management of the dairy. The farm must be productive of grass, corn, oats, and the usual feed crops. If not naturally productive, it must be made so. Science tells us how we can plow in clover and other green crops, and by the application of the right kind of commercial fertilizers with barnyard manure, make the crops pay a profit from the start, while improving the fertility of the soil. There must be a good supply of clean, sweet water, and it must be made convenient, if not naturally so. In short, it must be a dairy farm, as on its productiveness largely depends the economy of milk production. The herd must be composed of good milkers. If they are not owned and cannot be bought, the science of breeding shows us that in a few years, by using a blooded sire and no other, breeding from the best cows, and the best selections from their progeny, we may build up a herd in every way satisfactory. The better the cows, the greater the economy of milk production and the larger the profits. The barn and stables must be adapted to their purposes, so as to save labor and afford comfort to the cows. The speaker outlined what he considered an ideal stable, with hay-barn, silo, root-cellar, and granary attached, that would make feeding convenient, be easily kept clean and well ventilated, and afford the cows plenty of sweet air, uncontaminated by their droppings or exhalations, and avoid polluting the hay and feed with the reekings of the stable and the breaths of the cows. The dairy buildings must also be adapted to their uses, so as to save labor and cost of handling. The balanced ration or a close approximation is the key to economy and profit in the dairy. This is not so very hard to understand. The mean-

ing of only a few necessary words have to be learned; then by consulting the feed tables and studying the composition of foods, a close approximation to the balanced ration can be readily obtained. The more unbalanced it is, the greater the waste; the more nearly balanced, the greater the economy. By all means grow supplementary crops, so that when the pastures begin to fail there may be no lack of food to keep up the flow of milk. Corn is the usual resort for this purpose. Many grow rye, millet, clover, and even meadow grass. As to soiling to any extent, the speaker was not so certain as to its economy. On general principles, cows and all other animals should be kept in the open air as much as possible during all suitable weather. The minimum of confinement and the maximum of free out-door life is the better practice. In feeding, the feeder must be the judge of the condition and nutritive value of what he has to feed, and he must also be the judge of the condition of his stock. If thriving and contented, it is a pretty good evidence that they are well cared for and fed, though, perhaps, there may be chance for improvement. The owner should always be on the watch for chances to make favorable changes, and allow no man to be ahead of him in the prosperous condition of his herd and the profit derived from it. Be alert on all occasions, use what common sense you have, do your own thinking, and always act with a full consciousness that you must bear the consequences of all your own deeds. So shall you play a manly part in the great march of progress. Touching the question of growing on the farm what is fed on it, the speaker said this can easily be done in the East by the method known as intensive farming. Extensive farming is out of the question here, if success is achieved. The West, with its broad level territory and better conditions for using machinery, but with a naturally weaker soil, can beat us at extensive farming. We can and do beat them in grass and corn per acre. Statistics show that for the decade ending with 1889 the annual acreage of corn in New Hampshire was 32.7 bushels per acre; Vermont, 32.5; Maine, 32.2; Massachusetts, 31.6;

Connecticut, 30.1; Rhode Island, 30.2; the total average for the six New England States being 31.25. The total average for the country was 24.1. Only five other States went above 30 bushels per acre—Nebraska, 32.8; Iowa, 30.9; Ohio, 30.9; New Jersey, 30.5; Pennsylvania, 31 bushels. This year the total average for the country is 26 bushels, and for the New England States 36 to 40 bushels. Noting the large average of the New England States, Statistician Dodge remarks: "It may be worth inquiry why the average yield of corn per acre in New Hampshire, which possesses a granitic soil so far removed in fertility from the ideal maize bearing alluvium, is 32.7 bushels, and only 27.7 bushels in Illinois." The answer to this is, a naturally stronger and more enduring soil and intensive farming.

Some questions and discussion followed; but as it grew mainly out of misconception of points in the lecture, no new matter was brought out. The meeting adjourned to 7.30 in the evening.

At the evening session the hall was well filled with interested ladies and gentlemen, who were entertained by Hon. J. D. Lyman upon his favorite topic, "Forestry."

He said, among other things, that a forest is like any other crop in its growth and development. After it reaches maturity it begins to decay, and if not interfered with, growth and decay will just about balance each other, and no progress or increase of crop can follow. The true way is to cut the timber as fast as it is fit, thinning to exactly the right distance apart, as may be, permitting the young timber to come on as fast as the natural timber is removed. It would take many years to get a forest in just the right condition; but when once fairly started, no other known crop can be made to yield so large a profit. A wild undergrowth of white pine may be soon made to return a fair profit while thinning it; and an inheritance of a few acres of such timber in good condition, left to a boy, is one of the most valuable that he could receive.

Dr. Alonzo Towle followed, after an intermission of ten minutes, on the subject of "Corn Growing and the Crossing

and Intensifying of Breeds of Corn." He is a firm believer in intense farming in all its details. He would combine the better points of our scrub corn, as the best points of animals have been combined and united, by breeding in the better qualities and breeding out the objectionable ones, and fix and intensify this conglomeration of crosses as he went along by inbreeding until he had obtained his ideal breed of corn. In this way different individuals could build up different breeds, as has been done with cattle, until we have a few breeds of corn that will meet all the demands of the country. Breeding in, he would add new qualities and breed out bad or undesirable ones, and continue by inbreeding, using selections from the same combinations or crosses until he had a definite and fixed type. How far this method of improvement can be carried is not known; but it is possible, after we have fixed improved breeds or types of corn to select from, as foundation stock for future breeds, that improvement may go on indefinitely. No one has any idea that the limit in the improvement of animals has been reached, and why should we not infer that the future improvement in breeds of corn may remain open indefinitely? We must apply intense methods to all our crops and to the fertilizing and cultivation of the soil, until our average of corn shall reach 60 or 80 bushels per acre, instead of 30 to 40 bushels, and so on with the rest of our crops.

On the following day, sessions were held in the Grange hall, Dover, where a large meeting was called to order by Hiram S. Osborne, master of Cochecho Grange.

He introduced Mr. Gerrish, who spoke upon "Sheep Husbandry," which he considers an important American industry. He touched upon biblical allusions to the sheep, and referred back to the early history of this animal. It is of little consequence how or where the sheep originated. It is our business to accept and select from the best, without prejudice or preconceived notions. Few men are capable of being successful in improving old breeds or establishing new ones. It is better for the average man to take the pure breeds as

they are and try to keep them pure. A sheep with a fair fleece and good for mutton is needed. The Merino comes as near to this as any one breed. But, as a rule, more mutton is needed, and this implies less wool, as we cannot have a full yield of both wool and mutton in the same animal. The following, he thinks, would be found profitable. He would wire in a small pasture or two, to keep out dogs. Cheap ewes—"jumpers"—may be purchased at a small outlay. On these use a ram of some pure mutton breed, and you can secure young lambs in season and of a good quality at comparatively small cost. When the lambs are gone, you can fatten and sell the ewes. This, in most cases, is the better way to do. Then purchase another lot of cheap ewes, and grow in the same way another lot of young lambs for market, the ewes again to follow. In this round there is profit. But the lambs and sheep must be well fed. It is possible to establish three or four new breeds suited to America, but it is not recommended that all should go into this business, only those fitted for it and well versed in the principles of breeding. To succeed, we must practice what is called intensive farming—making a few acres turn out as much as we have heretofore reaped from many acres.

Mr. Lyman followed with a few remarks illustrative of the profitableness of wool and mutton production with our cheap lands. It is possible to make the mutton and lamb product pay all costs, leaving the wool as clear profit; and this is a larger profit on the capital invested than that on any line of manufacturing that the speaker could think of. Manufacturers are content with a small profit, so it is a certain one. A mill or two of extra profit on a yard of cotton cloth would give any manufacturer a great advantage over competitors.

Mr. William T. Wentworth said he believed in sheep. He had kept them and found them profitable. He sold them and went into dairying. Now he is thinking of going back into the sheep business. He had been troubled with dogs, and in no case did the sheep do well after dogs got among them.

Mr. Curtis presented the subject of "Milk Production," after which adjournment was made until evening.

At the evening session Dr. Towle spoke upon "Corn Growing" and Mr. Lyman on "Forestry."

The sessions at both Lee and Dover were characterized by a good degree of interest in the subjects presented.

CHESHIRE COUNTY.

MARLOW AND ALSTEAD.

The institute for Cheshire county was held at Marlow and Alstead, December 22 and 23. At Marlow the session was called to order by James M. Perkins, master of Excelsior Grange. President Humphrey was the first speaker, occupying an hour or more in contrasting the farmers' condition at present with that of sixty years ago. Dr. Alonzo Towle followed upon the subject of "Stock Feeding." The discussion of the subject was continued by Hon. James Burnap, P. E. Fox, G. W. Howe, Dr. Perkins, and others.

The subject at the evening session was "Corn Growing," and a good degree of interest was manifested. Numerous questions and remarks continued the meeting until a late hour. Singing was furnished by the Grange choir, which added much to the exercises.

The session at Alstead on the following day was accorded a small attendance in consequence of the severe rain storm prevailing. J. F. Dickey, master of Warren Pond Grange, called to order, and the subjects discussed were "Stock Breeding" and "Stock Feeding," by President Humphrey and Dr. Towle. The general discussion which followed was participated in by a number of gentlemen present.

At the evening session, "Corn Culture" and "Farmers' Opportunities" were discussed, and a good degree of interest manifested. The unfavorable weather interfered with the success of the session at Alstead.

SULLIVAN COUNTY.

NEWPORT.

An institute covering two days was held by the State Board of Agriculture at Newport, January 13 and 14, 1892. The session was opened at 1.30 P. M. with an address of welcome by Bela Graves, of Unity, master of Sullivan County Pomona Grange.

ADDRESS OF WELCOME.

BY BELA GRAVES, OF UNITY.

Mr. President and Gentlemen of the State Board of Agriculture :

In 1870 the Legislature of New Hampshire, recognizing the fact that there was an increasing feeling of uneasiness and discontent among the farmers of the State, growing out of the impression which almost universally prevailed that other industries were and had for years been vastly more remunerative than farming, and also taking note of the flood-tide of emigration that was flowing from the farms to the great West and the large manufacturing towns, because of this discontent, deemed it advisable to institute measures, if possible, to arrest this exodus of our young men and young women, and restore a feeling of hopefulness and content among our rural population, by making agriculture at once more popular and remunerative. Accordingly, a law was enacted that year through which the Board of Agriculture came into existence. The Board consisted of one member from each county and a secretary elected by the Board. Hon. Moses Humphrey, of Concord, was made first president and James O. Adams, secretary. As soon as practicable, they entered upon their duties, and commenced holding institutes throughout the State, where those familiar talks were carried on among the farmers with which many of us are more or less familiar. The secretary has annually made a report composed of statistical and

other matter supposed to be of use and interest to the practical and progressive farmer. In Mr. Adams' fourth annual report I find this in the concluding chapter :

PATRONS OF HUSBANDRY.

This order, which has had but a year's existence in the State, has exerted an influence over a good portion of the State and is continually increasing in membership. Then follows a list of the forty-two Granges in the State—where located and names of officers. Thus it appears that at this early day in the life of the Grange it was regarded as an ally and co-worker with the Board of Agriculture in the work of promoting the welfare of the farmer. In short, I think I may assume that this was Mr. Adams' modest way of announcing to the world that their first four years' labor had been so far instrumental in awakening thought and promoting action among the farmers, that they were already at that time organized and actively at work; and, if not engaged in exactly the same line of work, were at least supplementing all the efforts of the Board to correct those impressions which were proving so demoralizing to New Hampshire's farming industry. I am not aware that there has ever been any friction between the two organizations, but, on the contrary, they have always been co-laborers. Therefore, after having worked together for nearly twenty years to promote the welfare of the State by advancing the interests of agriculture, it seems proper that we pause for a moment and make note of some of the fruits of their joint labors. While it may be gratifying to the chronic grumbler and fault-finder for me to admit that there has been great depreciation in the price of farm lands from the fictitious values placed upon them by the inflation of war times, yet it is true, I think, that a better feeling exists among the rural population than formerly. More hopefulness prevails. Better and larger crops are raised with less labor because of improved methods of tillage. There is more intelligence among the people. Refinement and a love for the beautiful, as is manifested by the adorning of the

home, however humble, with growing plants and flowers, both indoors and out, prevails far more extensively than formerly. There has been a great awakening of thought among nearly all classes of farmers upon all matter pertaining to their welfare. More books, papers, and magazines devoted to agriculture are found in their homes, and their well worn appearance shows that they are read and studied. The income of the farmer and the productiveness of his farm has been greatly increased, and the labors of his wife decreased by the establishment of creameries in many sections of the State. And finally, without stopping to enumerate the many other improvements in farming and farm life which the Board of Agriculture and the Grange have been instrumental in developing, if there are any who are still skeptical of the good they have accomplished, I will simply mention the fact that the last Legislature of New Hampshire, with the approval of the people, appropriated one hundred thousand dollars to build a college of agriculture and mechanic arts in which to educate our young men and young women in the practice and science of agriculture and mechanics. Twenty years ago what think you would have been thought of the man who could stand up in the Legislature of New Hampshire and introduce a bill appropriating one hundred thousand dollars to build an agricultural college? I think he would have been looked upon as far better qualified to adorn an insane asylum than a deliberative legislative body like New Hampshire's general court.

And now, in view of the sympathy and cordial feeling that has always and still continues to exist between the Board of Agriculture and the Order of Patrons of Husbandry, the management have deemed it the proper thing to do, for the Grange to speak words of welcome upon this occasion to the Board of Agriculture. The Hon. Moses Humphrey, of Concord, first president of the Board, still continues to hold that distinguished position, and, I am more than happy to observe, is here with us to-day; and it is the proud privilege of Sullivan County Pomona Grange, in whose behalf I speak, to wel-

come you, Mr. President of the Board of Agriculture, and your associates, to the good town of Newport and vicinity, accompanied as you are by the largest array of talent that has ever appeared before the farmers of Sullivan county. There is much reason for congratulation on our part that we are to be permitted to enjoy the benefits of the best talent the country affords, upon such a variety of subjects. The Board of Agriculture is certainly entitled to our warmest thanks for the zeal they have shown in assembling so many specialists to address us upon this occasion, and should there be any apathy manifested on the part of the farmers during any portion of this meeting, it certainly cannot be laid to the charge of those who have provided and advertised the programme; for, certainly, neither effort nor expense has been spared to make this entertainment equal to the best the State has ever afforded. And it is certain that those who avail themselves of the opportunities presented at this time will be many times paid for all their time and trouble, and will go away feeling assured that the cause of agricultural instruction has, indeed, taken a new departure in this State, and that henceforth he who does not keep abreast of the times in all that pertains to his calling will be a sluggard, indeed, and unworthy to be classed with those farmers who are ever on the alert to grasp new ideas and avail themselves of new and improved methods of work. And now allow me, worthy and venerable sir, to welcome you, not alone in your official capacity as chairman of this honorable Board, but as a worthy brother Patron in that noble order whose first fundamental principle is the development of a higher and better manhood and womanhood among ourselves.

Although your connection with our order is of so recent date that we look upon you in the light of an eleventh hour acquisition, yet I doubt not you can bear testimony to the fact that you have already received the penny. You have long since passed the period when most men retire from active life, yet you still possess the strength and vigor that enables you to perform the duties of a much younger man than your-

self; and it is my prayerful hope that you may live to make many more pilgrimages to this county where are so many haunts that were familiar to you in early manhood days. For so long a time has your presence been a familiar figure to us, and so intimately have you been associated with our calling in generously devoting your time to promote our welfare, that we are beginning to look upon you as an integral part of our real estate. Your very presence here to-day preaches to us a sermon more eloquent than words can express. It teaches us that you have always squared your life by that beautiful sentiment of our order which counsels us to avoid intemperance in eating, drinking, and language, also in work and recreation. And now, Mr. President and gentlemen of the Board of Agriculture, allow me to assure you that the Grange, and, I think, the farmers of Sullivan county, pretty generally, fully appreciate the value of the rich intellectual entertainment promised in the programme of this institute. I trust and hope your labors upon this occasion will be productive of much good, and create an awakening among the farmers of this county that will stimulate them to renewed efforts to make their occupation more honorable and lucrative by inducing them to give more thought to their work and better tillage to their soil. It is certainly to be regretted that there is a small class of men called farmers, whom neither this Board nor the Grange can influence for good. They are the ones that bring discredit upon our calling, and do much to lower the standing of the farmer in the estimation of many engaged in other industries. In no other occupation does shiftlessness and the want of intelligent industry stand out so prominently as in farming. The sluggard farmer always makes a blot upon the fair face of nature. His work or want of work stands out prominently and alone. Bushes and brambles are growing about his premises; his fields show evidence of no better tillage than hog culture. The clapboards are falling from his house; the chimney is tumbling down; the blinds clatter in the wind. His barn, which is becoming denuded of boards and shingles, is so twisted out of

shape and represents so many curves and angles, that none but an expert student in geometry can describe them. Verily, what a distressing picture he presents! Place the same man in town or city, and how little show he makes. He becomes, very likely, a wage worker, and mingles with his fellows by day; loafes with his set in the evening; and gets away to his hired tenement at night, leaving no outward stain. This condition of things we cannot hope wholly to eradicate until the millenium has, indeed, come. From the very nature of the case, laziness and want of thrift upon the farm must always be too conspicuous, and it is certainly unjust to allow this state of things to detract from the standing of the farmer who represents intelligence and enterprise in his calling. The educational influences of the times are doing much to make farming popular, and to dispel the illusion that other occupations are more honorable than ours; and we are encouraged to hope that the time is approaching when we, the farmers,—the fruits of whose labors constitute the bed-rock upon which all other industries rest,—shall occupy that position socially, politically, and financially, to which we are entitled from the importance and honorable character of our calling.

And now, in conclusion, I should feel that I had fallen short of the duty I owe to the order I represent, did I not extend a cordial invitation to those farmers outside our organization to come and unite with us. Come and bring your wives, your sons, and your daughters, and join with us in the grand and noble work of developing our social and moral attributes, increasing our intellectual acquirements, strengthening our political influence, and assisting in the inauguration and development of a system of coöperation that will make us financially stronger.

RESPONSE TO ADDRESS OF WELCOME.

BY PRESIDENT HUMPHREY.

In behalf of the Board which I have the honor to represent, we extend to you our cordial thanks for the kind reception

you have given us, and especially to the citizens of Newport and the adjoining towns. Newport is dependent for its prosperity largely upon the agricultural interests of the surrounding country, as well as upon the manufacturing industries within its borders. Newport is the natural centre of business for this section of the State, and I have always admired it as an ideal country town. Forty years ago I lived in the adjoining town of Croydon, and came here to trade, and became acquainted with many of the townspeople; but now I find that most of my old associates are gone, and new people have taken their places. Many of them went West and founded new communities. In those days western New York was the West, and Ohio was the extreme limit of Western emigration. The years pass so quickly that it seems to me but a short time ago when, before the days of railroads, the Western pioneer and his family left the old home with their household stuff loaded into a heavy, wooden-axled wagon, and pots and other domestic utensils hanging underneath. The descendants of those hardy and adventurous men and women have built up a great country; and the credit is due to the indomitable Puritan spirit of these New England hills. Those men did not have the chance for schooling and culture that their descendants have, but they had naturally strong minds, which were further strengthened by their efforts to reduce the wilderness and render it habitable. From that stock have been produced the scholars, the statesmen, and the generals of the last thirty years. Education and culture and wealth are good things; but they are not everything, nor are they nearly everything. Indeed, if they produce in our young men and women a softness of mind and body, which will unfit them for the future struggles for right and liberty which may lie in the path of our national life, they are deeply injurious. Therefore, let us jealously preserve the old-time New England spirit of rugged independence, sterling honesty, and patriotism. There is no kind of life that preserves these qualities as country life, no kind of occupation that promotes them more than the business of

farming. It should be the care of all those who have at heart the welfare of their State and country to ennoble that occupation. Our Agricultural college will aid in this—it is in the line of progress. None of our young men or women who have any ambition are willing to plod along in the old ways. They have inherited the go-ahead Yankee spirit, and if we do not give it scope in rural life, they will seek for it in some other field.

But I will not prolong my remarks. We have a long programme, which has been arranged at the expense of considerable time and trouble.

THE PRESIDENT: I now have the pleasure of introducing Prof. W. W. Cook, of Burlington, director of the Vermont Experiment Station, who will address us on “Maple Sugar Production.”

MAPLE SUGAR PRODUCTION.

BY PROF. W. W. COOK.

Among the industries peculiar to northern New England the making of maple sugar takes a front rank; and although millions of pounds are made each year, yet probably this is not half of that which could be yearly produced from the sugar orchards now in existence. The soil and climate seem peculiarly adapted to the manufacture of the best quality of the article. Though the maple grows as easily and readily in Michigan, Wisconsin, and Minnesota as it does in Vermont and New Hampshire, yet there is almost no first-class sugar and syrup made in those States.

The tree that is commonly tapped for the production of sugar is that called the rock maple (*acer saccharinum*), and this makes undoubtedly the best quality of all the varieties of the maple. There is another variety that produces pretty good sugar, which the botanist calls the red maple (*acer rubrum*), but what is known in Vermont and probably in New Hampshire as the white maple; while what the botanist calls the white maple (*acer dasycarpum*) is commonly

known among the farmers as the soft, river, or swamp maple. This last produces sap in abundance, and the sap contains a large amount of sugar, but it also contains so much coloring matter and vegetable acids, on account of its growing in low, damp grounds, that the sugar made from it is hardly marketable; while the red maple, which grows on the higher land and obtains a large size, produces a quality of sugar scarcely inferior to that of the rock maple. The reason this is not more used for the production of sugar seems to be the fact that most of those who have tested it have failed to take proper precautions to keep out from the sap the drip from the bark and also the sap from the bark. When the hole is bored deep enough and a solid spout is used which is driven in firmly beyond the bark, it is possible to get a large quantity of a good quality of sugar out of the red maple.

Like all other branches of farming, we find different sugar makers using a wide range of apparatus to perform the same operations. From the tapping of the tree to the marketable sugar, there is choice of a great many different kinds of articles for the performance of each step. In nothing is there more difference of opinion than in the question of spouts. The perfect spout should not allow sap to leak and run down on the tree, since it ferments and kills the bark. It should not require a hole so large but that it will heal over easily after the spout is withdrawn. It should be driven easily into the tree, and hold there firmly when only driven just through the bark. It should be covered on top so as to keep out as much as possible the drip from the outside of the bark of the tree; and when tin pails are to be used, should have some attachment to hold the pail. He who can find a spout which will fulfill all these requirements had better get it and use it, regardless of price; and though there are several on the market which claim to possess all these advantages, different sugar makers are equally strenuous in favor of each of them and against each of them.

The tin pail seems to be the outcome of the gradual change for many years towards lightening the weight of the recep-

tacle used to catch the sap, and it is undoubtedly the best, provided it is properly used. The present practice seems to be in favor of using a tin pail and hanging on the spout, though it requires a spout well made and well put up to hold a pail in a high wind. The objection to a tin pail is its drawing the sun's heat and souring the sap when it is not gathered often, and the objection to the wooden bucket, in addition to its weight, is the tendency of the wood to absorb the sap and become sour. Both of these can be overcome by care, and it is possible to make the best grade of sugar using either of the above forms.

Covers for the sap buckets are now used in many orchards. They may be laid on top of the pail or fastened to the spout, or, as in a form lately patented, they may have strong wire hooks which clasp into the bark of the body of the tree. However fastened, they should be painted a different color on the two sides and turned when the sap is gathered, so as to show at a glance by the color whether or not the pail has been visited. The use of the cover is two-fold—to keep out the rain and the snow, thus saving boiling down the extra amount of water, and more particularly to keep out the dust and leaves and the drip from the trunk and branches.

Whether the sap shall be gathered by hand with a neck-yoke, or whether that neck-yoke shall be borne by oxen, or whether the sap shall be spouted to the sugar-house, depends largely on the size of the orchard, character of the ground, and relative situation of the orchard and sugar-house. Which-ever method is used, it is best to keep the underbrush pretty well cut out, and especially all evergreens. It is the almost universal testimony of sugar makers that those who spout the sap to the sugar-house cannot make so white sugar as those who gather in some other way. With wooden spouts which quickly get sour, this can be understood; but why it should also happen with those who use tin spouts is not so apparent.

All sugar makers have to use a sap holder, and in this article will be found the cause of the poor quality of a great

deal of sugar. To explain this, let us consider what are the causes of good and poor sugar. The sap as it comes from the tree is quite pure, containing, besides the sugar, a small amount of mineral matter and a little larger amount of vegetable matter more or less united with the mineral matter. This vegetable matter is a very variable quantity, usually lowest on high land, and is freely obtained from trees standing in swampy ground. If it were possible to evaporate this sap as soon as it comes from the tree, without any impurities getting into it and without burning it a particle, we should get snow-white sugar that could not be told from the granulated sugar of commerce. But a fermentation begins as soon as the sap leaves the tree and gets into the air, and this fermentation produces materials tending to give the dark color to the sugar. The longer the period is between the flow of the sap from the tree and its manufacture into sugar, the more of this fermentation will take place. The higher the temperature at which the sap is held, the more there will be of this fermentation; so that the sap should stay in the holder as little time as possible, and should be kept as cold as possible all the time it is there. It is best to keep ice in the holder all of the time, to gather the sap often, and run it down to sugar as quickly as possible after gathering.

In no one article of sugar apparatus has there been so much change as in the evaporator. The old-fashioned iron kettle made slow work, and, necessarily, a poor grade of sugar, since there was a good deal of sugar burned on to the kettle, and much smoke and dirt got into the sap while boiling. This has gradually changed to the large pan set in stone work, or to several smaller pans side by side, the syrup being dipped from one to another as it became thicker, and finally to the continuous evaporator, which takes the sap in at one end in a continuous stream and delivers the syrup at the other. There can be no doubt that the evaporator has lessened the labor at the sugar-house more than half, and that it makes with the same degree of care a better grade of sugar and syrup. There are many different forms on the market,

each one claiming its own peculiar advantages. Among the advantages of some of the newer forms is the cover which keeps out the dirt, and at the same time works down the sap faster with less fuel, and a new form of reversible pan which allows the scale which settles from one day's boiling to be dissolved by the sap the next day. It is still a disputed point among sugar makers whether it is best in the end to sugar off in the evaporator. It can be laid down as a general rule that that method is best which produces the sugar the quickest. At the same time the presence of nitre or sugar sand interferes materially with the quickest work. This so called nitre is a conundrum to most sugar makers. Chemically stated, it is a malate of lime; that is, a mixture of lime with malic acid. It is the same acid as is found in apples. It is as yet undetermined whether this malate of lime exists ready formed in the sap, or is formed during the process of boiling down, from ingredients contained in the sap. Certain it is that it does not make its appearance until after the syrup has been reduced to such a thickness as to weigh more than ten pounds to the gallon. All good sugar makers now take out the nitre, whether they intend to make syrup or sugar, but the methods used are quite various. At ten and a quarter pounds to the gallon not all of the nitre will settle out. At eleven pounds to the gallon it will settle perfectly, but the syrup is then rather thick for convenient use. Somewhere between these two will be the best point, and that is probably not far from ten and a half pounds to the gallon, which corresponds to the boiling temperature of 217 degrees. When the syrup has been boiled down to this consistency, it may be filtered hot through thick cloth, or it may be allowed to stand and settle and then be poured off from the nitre, straining the last part. One of the best sugar makers I know gets rid of the nitre in the following easy and convenient manner: The syrup is boiled down to the proper consistency, taken off, and while still hot poured into a large can to settle; the next morning the bulk of the syrup is poured or dipped off, and the last part, with the nitre, put into a bag of ordinary

unbleached cotton cloth, and hung up to drain off, hanging for a day or so; it is then taken to the woods and put into a pail of sap, when the sugar that is left in the nitre dissolves out, leaving the clear nitre in the bag. In this way the nitre is gotten rid of very perfectly, with almost no loss of sugar and with very little labor.

The standard for syrup is eleven pounds to the gallon, which corresponds to the boiling temperature of 219 degrees; and this is true of all grades or conditions of syrup, good, bad, or indifferent. When it is boiling at 219 degrees, it will weigh exactly eleven pounds to the gallon. Comparatively little of the syrup put on the market claiming to be eleven pounds to the gallon is actually as thick as that. At this degree of consistency a few crystals will form in the bottom. At one degree higher there will be a great deal of crystalization; at one degree lower there will be no crystalization. Most of the syrup as found on the market weighs about ten and three quarters pounds to the gallon, which corresponds to the temperature of 218 degrees. In making tub sugar the market demands that the syrup be boiled down enough so that it will nearly all grain, and also that it should not be so hard as to require a chisel to get it out of the tub. The best results may be obtained at 235 degrees. If the sugar is desired for the small cakes, or for the dry, stirred sugar, it will need to be heated to 242 degrees. These directions have been given in degrees because our experience teaches us that an accurate thermometer is the sugar maker's best guide; and although a person by long practice may be able to guess very closely by the looks or by the way it acts on snow, yet the thermometer is better and more satisfactory.

The statement has already been made that when the first run of sap leaves the tree, it is perfectly pure. This condition continues until the buds begin to start; then the sugar begins to change to the form called invert sugars or glucoses. This is still sweet, and if it could be obtained pure in the sugar tub, would be just about as good as the early sugar; but it breaks up very easily in the boiling down, making a

black, sticky sugar, and is accompanied by more or less vegetable acids, which help to make matters worse in darkening the sugar and preventing its crystalization.

It would be expected that something would be said in this connection concerning the maple sugar bounty that will be available next spring for the first time, and I am sorry to know that so few maple sugar producers of New Hampshire have taken out licenses as required by law. It is certain that only those can obtain bounty who took out licenses previous to the first of last July.

The understanding is, that the treasury department will try to make this bounty as beneficial as possible to the farmers, and since it is reasonably sure that both this coming spring and in the future, sugar, plus the bounty, will be more profitable than syrup without the bounty, it is necessary that all sugar makers should not fail to take out licenses before the first of next July, so that they can get the bounty a year from this spring.

Adjourned till 7 o'clock this evening.

EVENING SESSION.

The evening session was opened with a choice selection by the choir, which kindly assisted in the exercises.

THE PRESIDENT: I now have the pleasure of introducing to you J. H. Hale, of South Glastonbury, Conn., who will address you upon "Peach Culture for New Hampshire."

PEACH CULTURE FOR NEW HAMPSHIRE.

BY J. H. HALE, OF CONNECTICUT.

Ladies and Gentlemen:

A few years ago it would have seemed useless to talk about peach culture in New Hampshire or anywhere in New England. North of the latitude of the city of New York, on the Atlantic coast, was considered almost outside of the limits of the possibilities of successful peach culture. On my

little farm in Connecticut I have been working for nearly twenty years to demonstrate the fact that peaches can be profitably grown in New England; and possibly it is owing to some little success in that direction that your Board of Agriculture has seen fit to call me here to talk a little about the possibilities of peach culture in your State.

The older people here remember full well that in past years there were considerable quantities of peaches grown about many of the homes in at least the southern part of your State and in some favored localities pretty near the northern limits; that for years they bore fairly abundant crops of delicious peaches,—because a peach that is left to grow and come to full maturity on a tree is a delicious peach and none other. The peaches we usually get in the market, coming as they do from Pennsylvania, Maryland, or Delaware, perhaps from New Jersey or even further south, and the Western fruit, some of it even coming from California, while it may be very beautiful to look upon, is rarely satisfactory as a peach, from the fact that they cannot remain on the tree and come to their full maturity; so that we who can remember a few peaches that have been grown and left to reach perfect maturity have a remembrance of something far different from what we buy in the market. One cause of failure at the present time to raise peaches successfully is the yellows, and another, more serious, is the winter killing of the fruit buds. We used to have abundant snows and an even temperature, and the trees were well protected. Whenever there was a failure of peaches, it was usually when there had been little snow, or when the snow had been swept off the face of the earth and then a cold wave had come.

Fruits grown in New England, if we can only grow them, are much superior to those grown in any other part of the United States. After studying the fruit industry of the United States and carefully testing fruits from all parts of the country, I am frank to say that no section of the United States can equal New England for quality. We have also the best markets here in New England. A peach, to be

good, must ripen on the tree; and if we can produce them here at all, we can leave them on the tree until they are thoroughly ripe, because our markets are right at home. We are surrounded by thriving little villages whose inhabitants are hungering for them and have the money to pay for them; we are living in a prosperous country. Away from here people are telling about cold, bleak New England and the hard times we have to get along; but after going all over the United States, I find no people so prosperous in outward appearance as the people of New England.

The great drawback to successful culture is our extreme climatic changes during the winter. You all know that when driving over a country road in a cold winter's night, as you go over the top of a hill the air seems warmer and dryer, and when you go down into the valley below the air is colder. The frost runs down hill into the valley almost like water. Although in a warm day in early spring the hill-top may be colder than the valley, there is an even temperature on the hill. You have some highlands in New Hampshire. I do not expect that you can raise peaches on the top of Mount Washington, but you can select medium, well elevated lands adjoining low lands, which will answer for frost ponds, if I might use that term,—not a great elevated plain. On an elevated plain your peach buds might be killed, while a little further away, at the same elevation, where there is an abrupt hill, the buds would survive. By the selection of lands such as I have described, not wet or cold, nor so dry and gravelly that they will produce nothing else, but good, fair, average farming lands such as we have in New England, there is a possibility of carrying the peach buds through, not every winter perhaps, but possibly one winter in three or one in four, and getting a full crop, and even every other year getting some fruit. There is the chance for the commercial orchard; there is the chance for anyone living in such a situation to produce peaches here in New Hampshire.

In more unfavorable localities, if you fail to procure peaches and want them, you can plant a few trees on a side

hill, and each year, beginning the first year after they are planted, dig under one side and bend them over a little, and cover them with earth. During the earlier years of its growth there is no necessity of doing it to save the buds; but if you do not get in the habit of turning it over and loosening the ground you cannot do it so easily when it is older. In that way you can grow most choice varieties.

For planting an orchard of peach trees the land should be thoroughly plowed and prepared. They need cultivation. They may be planted at a distance of 15 by 15 or 20 by 20; or, if you are willing to prune very close, they may be planted 12 by 12. Grow some hoed crop between them for the first two years, and after that give the peaches the whole land and continued cultivation.

I have had the best success where the young trees received from the nursery row have had their tops entirely cut away, just a cane left, and the roots well pruned. The old idea was, to plant all the roots we could get, and cut off any bruised branches. Of late years we have pruned a little more. After attending the meeting of the Pomological Society in Washington last fall, and hearing the results of some experiments made, I have gone still further. In these experiments they cut the main body of the tree down to fifteen or eighteen inches, and then cut the roots all off entirely, except little stubs of about an inch in length. These had so much better growth than others not so closely pruned that I have been tempted, in planting a large orchard, to adopt this plan. Perhaps it is a risky experiment. At least, all the broken or bruised roots should be cut, and then see that they are spread out well. The average planter of a tree wants a big top when he starts out; he wants to see it there the first year. He is very much afraid of pruning, and a peach tree needs thorough pruning at the start. A gentleman drove into my grounds one spring, and wanted me to let him have a few peach trees. He selected his varieties and said, "Don't those trees need a little pruning?" "Certainly." "Show me how." So I pulled up a pair of thrifty

trees, sized them back about eighteen inches, and cut the top off. Then I took off a few roots. The lady said, "John, don't let him do that; how they will look on our grounds!" I said, "We will trim these for you and leave the balance for Mrs. Redfield," and that seemed to please her. I suppose she thought she would plant them where they would show, and let his take a back row. Along in September a lady bowed to me and said, "Wait a moment; I want to talk with you. Why didn't I let you trim all those peach trees?" "Why; what is the matter?" "Why, John's are growing three or four feet, and mine arn't any bigger than they were when they were set out." It took all the life and vitality of the tree to carry along the wood there was there. The trees lived, but they did not grow for a year.

The cultivation should be as thorough as for any farm crop, and be kept up continuously and as long as the tree is expected to do anything. Do not get them started, and then, after two or three years, turn the land into grass, and trust in Providence, but keep the ground thoroughly cultivated all the time.

As to fertilizers, I have observed that many trees grown in gardens, which are usually the richest part of the home grounds, and are generally manured with stable manure, rich nitrogenous matter, that they are more tender in wood and bud, and also rather more susceptible to the yellows, than trees on the same farms and under like conditions, but, perhaps, back on the hill lands where corn had been planted, and so far away that the farmer did not feel like hauling his fertilizers so far, but fertilized his corn with ashes, and, perhaps, threw a few ashes around the trees.

I have avoided the use of nitrogenous fertilizers, but have used heavily fine ground bone and potash in some available form, in wood ashes if possible, sometimes in cotton hull ashes, sometimes muriate of potash, sometimes high grade sulphate of potash. Heavy applications of potash and phosphoric acid have sometimes developed a tree more hardy, more able to withstand the severe climatic changes of our

New England winters. In an adjoining field to mine, of exactly the same soil, stable manure has been heavily used; but I have in the last two years secured partial crops when my neighbor has had none.

These little trees, planted as I have indicated, leaving nothing but the bare cane sticking from the ground, will in the spring throw out branches all the way from the ground up at each joint. When they get well started, I rub them all off, except three or four near the top. Where we have a large orchard we wear a buckskin glove. We rub off the branches, leaving a limb on this side, one on that side, three or four, possibly five. You have got to use a little judgment in each case. With thorough cultivation and under fair conditions, these will make a growth of from one and a half to four feet the first season, and should make an average growth of three feet. In the following spring you should shorten them about one half, and each will throw out two or three new branches which should be shortened, and so on, continually shortening. In this manner you can turn it this way or that way, in two or three years. The form of the peach tree is more readily changed by pruning than any other tree, without any injury, that I know of. The shortening gives a well shaped tree; it is less liable to be swept about by winds, gives great increase to the amount of bearing wood to fruit from, if it ever comes, and seems to be better in every way.

Borers have killed more trees than any other cause. Many trees that are said to have died from yellows are simply killed by borers. They may be kept out pretty thoroughly by washing the trees with carbolic acid and lime. For a dozen trees take a quart of soft soap, two ounces of carbolic acid, two gallons of water, and lime enough to make it into a thick paste, and apply with a swab about the base of the tree along about the middle of May. It will not kill the borers that are in there, but will keep the beetles from laying their eggs. Out of 5,000 trees we have found as high as 125 or 150 that had borers after this treatment.

The yellows is rather more difficult to handle. Just what is the cause of it we do not know. The agricultural department at Washington are investigating it. They can propagate it, but they have not discovered how they can stop it, yet they hope to in time. Trees that are overstimulated by the use of nitrogenous manure are more apt to die from the yellows than those that have a slower growth. Heavy applications of potash, while they do not cure the disease, hold it in check somewhat. But on the whole the best thing is to dig the tree right up, root and branch, and then you are absolutely safe.

The directions I have given will, I believe, help towards raising peaches in New Hampshire. Occasionally you may not only get a crop, but get one so heavy that the trees are overloaded. The fruit may be of medium size and of somewhat inferior quality. In that case you must resolutely throw away a part of the fruit. We had been working at our orchard for about eight or nine years, and finally one spring the buds came through in fine shape, and every tree was loaded and began to bend down with the fruit. We decided that we would not have any two peaches nearer than four inches, and we found that required the picking off of four out of every five. It takes considerable moral courage to do that, if you have but one tree which you have been watching for five years. You would not believe that by that treatment the tree would bear more fruit and of much better quality; but such is the fact, and I have proved it by experiment. One year I selected two trees, each having between twelve and thirteen hundred peaches. On one I left only three hundred; and that tree produced more bushels of fruit than the other, and its fruit sold in the market for \$3.65 per half-bushel, while fruit from the other tree brought only 85 cents per half-bushel. So, while you do not lose anything in quantity, you gain in size, appearance, and quality, and you save the vitality of the tree. Excessive reproduction kills the life of both plant and animal. The pit of the peach takes more of the life of the tree than the flesh does, a dozen

times over, and a great quantity of them weaken the tree tremendously.

There is as much in selling fruit as there is in growing it. You want to put fruit on the market, or anything else, for that matter, in the most attractive style possible, and also in an absolutely honest style. Handle the fruit more carefully than you would eggs; sort it and grade it into its proper sizes. Don't put two or three sizes into the same package. Two years ago, I saw apples from a grower in a certain town in New England sell readily at two dollars a barrel, while another lot from the same town sold from a dollar and a quarter to a dollar and a half while their quality would average higher than the others. The difference was that the low priced apples were packed, big, little, and medium, all together, while the high priced apples were packed, fine large ones in one lot, mediums in another, and the low grades in another, and carefully stenciled just what they were.

I found that it paid me to take out all the imperfectly shaped peaches, all discolored ones, and all very small ones; then take all the others that were perfectly sound, and separate those that were two and a half inches or more in diameter and call them Extras, and take all that were from an inch and three quarters to two and a half inches and put them in as No. 1's; and put the others in as No. 2's. I pack them in the basket the same from the bottom up, never putting finer peaches at the top than below; not that I am any more honest than any other peach grower, but that way pays best as a matter of dollars and cents. I have labels printed of three colors. On the Extras I put a red label, on the No. 1's a white label, and on the No. 2's a blue label, and call them Extra Selected Peaches, and put on our name and post-office address, and "Warranted every peach to be perfect all the way through." It is a habit with some purchasers to turn up a basket of peaches or dig down into them. "No, sir," I say, "you cannot touch that fruit; there it is; look at it; when you have seen the top it is all spread out before you." "What is the price?" I give the price, 50 to 75 cents above

the market. They take it, and pay for it, and come for more, and come for more still and cannot get enough.

On the whole, while I have put a great deal of hard work and a great deal of money into it, all my friends would lend me, and I would have put in more if they would have lent it, I have been able to get it all back and leave a nice little profit to myself; and above all that, I have had at least a clear million dollars' worth of fun. People said it could not be done and that I would make a failure of it. Now they say I am in luck, and I think I am.

I believe that peaches can be raised here in New Hampshire. You have land equally as good as we have; your access to market is equally good; labor and fertilizers may be had on equal terms with us. While some sections of your State are very much colder than Connecticut, you have a more even temperature in the winter. When the cold frost waves come the mercury on your lands not exceeding a thousand feet does not go much lower than it does with us. One of the finest crops of fruit we have ever produced was after the mercury had been 19 degrees below zero. Many people say that 10 degrees below will kill peach buds. I have had them killed at zero, and I did not have them killed at 19 degrees below; but at 19 degrees below there were two feet of snow on the ground. You get much more snow in New Hampshire than we do.

I think the climatic conditions in the southern tier of counties in New Hampshire, and perhaps as far north as the central portion of the State are fully as favorable as in Connecticut. In Hillsborough county you have had commercial peach orchards for the last twenty years, and some of them have produced quite satisfactory results. A few of them have not been cared for and developed as they might have been. Fruit went from there to market in 1890, a year of almost total failure in the United States, and sold for from \$4 to \$5 per basket; and these orchards that produced a few baskets might have produced ten times as many had the growers taken care of them. I have seen fine peaches in the

market from Cheshire county and about Concord. I believe that if the farmers of New Hampshire, encouraged and stimulated by the Board of Agriculture, make up their minds that they will grow peaches here, another industry will be added to diversify your agriculture. I do not think you can all go into the peach culture and get rich out of it; I do not think you had better go into it on a very large scale; but I think in a fairly favorable locality, on lands such as I have described, a man who has a taste for horticulture (and no one else should undertake it) will meet with success. If I had a little home ground right in this town of Newport of half an acre or so I would plant a peach tree every year; and if but one in ten bore fruit I should feel well paid for the trouble.

There is a vast difference between the hardiness of the buds of different varieties. Some will stand a great deal more change of temperature than others. Of the great number of varieties in favor, there are not more than ten that it is well to attempt to raise in New England, and out of those ten there may be selected five or six of the hardiest. Some of the most hardy are not our best peaches, yet many of the very best are quite hardy. The old Nixon, the Stump, the World, all white peaches with rosy cheeks, are among the best peaches in any locality; and, although not the most hardy, are in the hardy list. The Crawford, a fine, showy peach, is tender; and yet a gentleman told me last night that he had raised a fair lot of Crawford peaches in New Hampshire.

The Pratt Seedling, late years, has begun to rot, and is a little uncertain. Down in southern Hillsborough county and in Worcester county, and in about a half-dozen towns about Milford and Wilton, and over in Townsend and those adjoining towns they have been growing a peach which originated in that vicinity. They have had crops of peaches for the last five years, twice when there were no peaches anywhere else in New England.

Many say that seedling trees are more hardy. That may or may not be so. I rather think there is a little something in it. But the single seedling tree that is growing and bear-

ing on a farm may be the one survival of the fittest of a hundred that have gone before and died out. But it is a fact that many times seedlings bear often inferior fruit when others fail. That leads up to the idea that in a section like New England there is a possibility of growing seedling orchards, planting the seeds, and thus securing more hardy varieties. Sometimes trees raised from pits are called frost peaches, because they do not ripen until after frost comes. White fleshy varieties are apt to do that. Yellow fleshy varieties come more true to their characteristics.

Prepare the ground, and mark it off into rows about four feet apart. Put two or three pits in a hill. When they come up pull out all but one plant in the hill, and cultivate with a horse cultivator. Plant them in the fall, and the freezing and thawing will crack the pits. Another way would be to smooth off a little piece of ground, lay the pits down, mix them with a little earth, cover them three or four inches deep, let them stay there, and then plant them.

The seedlings may be cultivated a couple of years, and then you will have to begin to prune them. If they don't come to bearing until they are four or five years old, keep them in close. When the trees come to bear, you will find a great variety of peaches, and you can select the good ones. Perhaps they are not as fine in color or quality, or as large as the choicer varieties, but they are good peaches; and by cutting out the surplus you will have an orchard, and although the trees will not be at even distances, you can get through to cultivate, and will succeed where you might fail if you adopted the other course.

A MEMBER: Will a peach pit come up after it has been "thoroughly dried"?

MR. HALE: What do you mean by "thoroughly dried"?

A MEMBER: Laid up on the window sill perhaps a week.

MR. HALE: Yes; peach pits will stand that, and a great deal more. Where they have laid in a dry shed or barn for two or three weeks, I have known a very large percentage to

grow. But it is better to plant them within a reasonable time, not let them get too dry.

THE PRESIDENT: We have raised peaches in Concord more or less ever since I have been there. I have some trees which furnish all the peaches we want in the family. I have not paid much attention to them. If I had done one half in the way of culture that our friend advises, I have no doubt I might have supplied the Concord market. He has given us a valuable lecture on peach culture, and has shown that there is both pleasure and profit in the business. If it is taken hold of as he has done, there is no doubt but you can make money at it as well as from any other source of farm income.

We are honored to-night by the presence of a lady who is able to speak interestingly in public upon various topics. I now introduce to you Mrs. Alonzo Towle, of Freedom, who will address us upon "Possibilities." I am sure you will be interested in what she has to say.

POSSIBILITIES.

BY MRS. ALONZO TOWLE.

Sisters and Brothers:

There are two questions to-day which seem to vex the serene mind of the farmer's wife. The first is, How shall we in the future perpetuate our success as a farming community, or how shall we establish permanently a class of men who shall be successful tillers of the soil? Some time ago we thought we settled that question successfully. We would send our boys to the agricultural college, and there have them educated in the line of agriculture. This is the very best thing we can do with this generation. But if we begin back far enough in our thought, isn't there a mightier dealing power underlying all other powers, a secret agent which explains many of the unexplained facts of the past in the bygone years? Who have supplied our cities and large towns with their most successful business and professional men? Who have filled all posts of responsibility with

responsible men? Who have ever sat at the post of love and duty and given to the world the best to be found? Truly, the farmers' wives.

Now, in this generation and for twenty-five years, what has caused and created this restless discontent that has been so prevalent among our young people—what has caused this heart-rending ambition to strike out here and there for something they know not what? I answer you by saying that it was transmitted from the mother. The mothers and the great-grandmothers who settled upon these hillside and valley farms, were women who were contented with their lives. They were far removed from the centres of civilization; they knew little of the world, and they cared less. The height of their ambition was to do their work, and raise their large families of children. Peacefully they lived; peacefully they died. Then came the transition period. By steam and electricity we were brought face to face with a different civilization; city and country were brought together; country women began to see that there was a condition of culture they had never attained, and never could, because of their conditions. Then began a life of discontent and repressed ambition that must be borne silently, and that restlessness has become stamped upon her offspring; hence, a race of restless, unhappy spirits.

Now, what we desire is to raise a class of men who shall look upon our broad fields with satisfaction. Can this be done by education? Not wholly; it must be born in them, and ground into their very blood and fibre.

How can women who are tired and sick of farm life, weary of its drudgery and its care, give parental nourishment to a class of men who shall have a love for the farmer's occupation? During the first five or ten years of a woman's life she is doing her most telling work. She is raising her family of children, and she is the least fitted for it during that time. She has neither physical strength, muscular force, or practical knowledge; she is herself a student during all those years. Now, what is the cause of this? Young girls, as a

rule, marry with scarcely any knowledge of what their duties are as housewives or mothers. They think they can get through—housekeeping for two does not amount to much; but they soon find there are cares and emergencies which they are wholly unable to meet. Traits of character develop in both themselves and the other members of the family that they never recognized before marriage. As cook, her hand is not as deft as when she stood beside the good mother, who helped out of her many years of dearly bought experience; and even with the mother, there has never been methodical training. It has always been haphazard in the most responsible part of woman's work, a guess work. Now, what are the results? Well, a part push through, and we call them our best housekeepers; but if they were to give you their verdict, they would all say that if they had begun their lives with the knowledge they possessed at the end of ten years, ten years more of happiness would have been given them. Another class get discouraged and give it up entirely. The third class keep on making mistakes day after day, the same to-day as they did yesterday, the same to-morrow as to-day; and by and by the little children begin to fill the vacant places at the table, and their palid, pale, dyspeptic faces show how a hidden evil is surely and silently at work undermining their health, rendering them unsuccessful through all their future life. This poor young mother looks back into the past with sorrow and into the future with fear. She knows there is trouble somewhere, she hardly knows where.

It is said to-day that woman is the greatest force in our moral and spiritual lives; but when she stands at the moulding board in the capacity of cook, she is wielding a power as mighty, for she is dealing out to those she loves best either those things which will make them strong, healthful, happy, and successful, or she is dealing out something to them which will make them wretched and miserable. How many ties have been severed, and how many hearts broken, because this king of our physical being, the stomach, has rebelled? How many men have been sent to their cups and a drunk-

ard's grave? How much of sin, and sorrow, and misery? You will never know until the great reckoning time comes. Many women of the nineteenth century are seeking for a mission; but here is a sphere so broad that it covers the whole earth, reaching even to its remotest corners.

Now, what would we have? A thorough, scientific household education, going hand in hand with physical training, giving girls a chance to understand what is expected of them; also, a chance to find some sweetness and pleasure in life, as they deserve, teaching them how much depends on them of the life and morality of society in which they live.

Now there is a place, or will be soon, where these girls can be taught. If the farmers and their wives will send their girls there, they can be educated properly, and the door will be opened to all the possibilities of a New England girl's life—health, happiness, and knowledge; and you will also have given her a chance to know and understand that she is capable of being a helpmeet to somebody somewhere, and you will have settled a class of women upon your farms who will be contented and happy; and they will raise contented and happy children, perpetuating their own qualities of contentment and happiness.

The other question that is perplexing the farmer's wife to-day is, How shall we obtain help upon our farms, help in time of need, help in time of sickness,—help, that the farmer's wife may have hours of rest, hours for recreation and improvement, as well as her husband? You hear the farmers and their wives scolding and complaining because the girls will not take up with this question of work, saying, how foolish they are to do other things and not this thing. But girls will tell you that the unpopular position of house girl, to-day, keeps most of the better class out of it. Now, one reason for its being so unpopular is because we have allowed it to drift into the hands of those who have neither practical knowledge nor mental aptness. The most artistic work and most respectable calling may become debased by being done year after year in a way that always needs supervision or else is slipshod.

What is the remedy? Systematic training is a positive necessity. I speak not only as a country housekeeper, but as a city housekeeper who has had experience. when I say that the lack in house-girls is want of responsibility and thoroughness. They have not been trained to self-confidence, steadfastness, or perseverance. A system of industrial education that will compel all girls to know how to do something and do it well, is the only remedy. It is also the only way to save the poor and dependent, because in stores, factories, and public places at large there is safety only for a few of those who, from their superior qualifications, hold superior places. Their remuneration is so small that they cannot long live respectable. The best gift that a state, city, or town can make is to proffer them a system of industrial education. But, you say, it costs something. It does not cost so much as it does to take care of them as inefficient help, paupers, criminals, and lost women. Suppose it does cost something; are we not under some obligation to the All-Giving Power? Are we unwilling to make a small return for the large benefits we receive? From whence comes our prosperity; from whence water, fire, electricity, and all the natural forces? Who buried the coal beds down deep in mother earth, waiting for the coming of man? Who secreted the gold and silver in tiny threads until a nation's wealth has been taken from earth's veins. Man's inventive genius and industry have accomplished much, and he who works should receive wages. But I see the possibility of a higher plane of thought and action where he who sows and he who reaps shall receive wages that they both may rejoice together. Not that we ever expect to see the day when there shall be no lazy people nor inefficient ones. There always have been such, and there always will be; but they will not be quite so lazy nor quite so inefficient as they would be if left to themselves. I believe that the only true way to temperance and sobriety, to chastity and cleanliness, is in teaching the young in right living and right thinking, teaching them habits of industry and efficiency. Some people, even at this late day, tell us

that universal education is a failure. They thrust into our faces that old Malthusian doctrine that people were born in guilt, and you never can make them any different. They forget that civilization and refinement, that has raised many to a high level, has also brought others to where they may be reached for and brought up higher still.

I believe the only true way to success is by teaching the young, especially the girls. Why are China and the Chinese in the condition they are to-day and have been for centuries? Because of her isolation and aversion to progress. Why is India wallowing in the degradation of heathenism and idolatry? Because gross ignorance has been her inheritance; a degraded and debased womanhood has been the mother of her people in their babyhood, and influenced them in childhood. A very ignorant and degraded womanhood can produce only a weakened, debased, and degraded manhood. Why is the bloody Turk heralded all over Christendom as a monster of cruelty? Why has France been the scene of questionable society? Because the moral atmosphere of woman has been low and degrading. Where in all this world will you find the noblest race of men? Where women have the most independence, where they have the most cultivation and the most symmetrical training. You know where that is. It is our dear America. One eminent English writer says, under the heading "America's Social and Economic Future," that she has stretching out before her a long vista of years in which she will enter into conditions more spacious than any European country can ever count upon, and that her present marks a higher level of well-being and happiness than any other nation has ever attained. We know this to be true; and yet we have not arrived at a condition of perfection. Our way is still onward to success, and over what road shall we travel, and by what means? I believe, dear friends, in the influence of heredity, not in heredity of blood, for there is no blood but has black spots in it somewhere, but in the inheritance of temperance, good habits, right training, education, deportment, from mother and father to child, onward

and onward, perpetuating the effects of right living. I also believe that the boys and girls of rich and poor should be trained to look upon labor as honorable, and upon idleness and inefficiency as dishonorable. They should be taught that the only true nobility and aristocracy is the nobility and aristocracy of the intelligent industrial classes; and should be taught to shun this cankering disease of shoddyism that has been gnawing at the vitals of society so many years. The day is coming when nothing but death and confusion shall prevail. When this time comes, a mistress and maid shall meet upon a level as far as intelligence and work are concerned, and we shall have willing workers and intelligent work; but this must be a matter of volition and not revolution. What can we do while we are waiting?

I have candidly thought the matter over, and this practical suggestion has come to me, — that we, as a Grange, should establish a Grange intelligence office or labor bureau somewhere in the centre of the district, with radiating offices in each Pomona district. It need not necessarily incur a great expense, as the power might be vested in one person; for I think there are many middle aged women, perhaps past middle age, widows, protestant girls of foreign birth, who would be glad to find homes in the country, especially in the summer season, if they knew how to reach them. It would also be convenient for the farmers in obtaining their help, as the day has come when we shall never again wish to take into our families a stranger, unless we know his past whereabouts. For those who have not come to that condition or position in life that they feel that they can keep help, we shall have to cut away from unnecessary work. It is a very hard thing for a housekeeper, one who takes pride in her housework, but we must do it. It is better for us to take care of ourselves, and we must take care of ourselves, if we are ever taken care of. Women long ago learned that. Husbands have their time and thoughts full of their own work if they do it well. The lady of leisure can always take time to develop gracefully; but the farmer's wife has many cares and her time is

precious, and she should therefore be careful to preserve her health and strength; she should keep herself beautiful, for the more beautiful she is, the healthier she will be. She should cultivate her mind; a few minutes in this direction every day accomplishes a great deal in the course of a year.

Victor Hugo said, "This is the age of women," meaning that women are being thrust more into the world than ever before, and that more depends upon her work than ever before.

Our way to success lies through the lives of our girls principally. They should be taught that they are responsible women; they should be taught that through them the world will either be cursed or blessed. But you ask, Have not the future fathers any responsibilities? Let us examine for a moment where their duty lies. Men tell us that we should be faithful wives and mothers, and that there is nothing so beautiful as woman in her own sphere, the mistress of the household, performing her work zealously, caring for her husband's welfare and her children's interest. How was it when as young girls they wooed them? Did they encourage them in this direction, or did they admire their fair curls, their slender, tapering waists, and their accomplishments? How many men married their wives because they had wisdom to wear their clothes as God intended they should? How many married them because they bore the insignia of industry upon their hands? How many married them for common sense and every-day life?

Girls will be what the young men of the period expect them to be, so far as attainments and acquirements are concerned. They cannot help it; they have always been the objects of circumstances, and they will continue to be to the end of time, whatever is said to the contrary notwithstanding.

I have known a great deal of women in my life. I have worked with them from my earliest girlhood in country, in city, in society, in church, and everywhere; and I think I voice the sentiment of most women when I say all they ask is deliberate consideration and justice, and that they receive the

fruit of their hands, and let their own work praise them in the gates; and I will add for my part, I, for one, have always received this from men.

THE PRESIDENT: We have present this evening a distinguished gentleman, who is to address us to-morrow; but I will ask him to say a few words at this time upon such subject as he may select. I now introduce Prof. I. P. Roberts, of Ithaca, N. Y., director of the Cornell Experiment Station.

ADDRESS.

BY PROF. I. P. ROBERTS, OF ITHACA, N. Y.

I am interested in peach culture, and I am greatly pleased that my friend, Mr. Hale, has enunciated so many great principles. It is most too late to-night to go over and name them, yet I cannot take my seat without trying to emphasize a word that he has said. He has struck a key-note when he insists on culture. He depends upon the land to raise the crop; he has quit raising peach trees after squaw fashion. Another thing that he has emphasized, is that nature will furnish us about all the nitrogen we want. I can buy four pounds of potash and two pounds of phosphoric acid for what one pound of nitrogen costs. The two former are manures which remain in the ground, and, if I do not use them up and squander them, they will be there as an inheritance to my children; but the nitrogen is always seeking to get away.

Then he has emphasized another thing, and that is, that the American boy will not stand running around to the grocery stores with a lot of worm-eaten apples, trying to sell them.

I am interested a thousand-fold in the raising of good men and women, because, no matter how fine our peaches or how beautiful our animals, if our boys and girls are not what they should be, then all else is worthless. The motive of all our labor and scientific research is that girl and that

boy. But to-day we know better how to feed a pig than we do how to feed a baby. I can give you the formula here to-night how to take a young pig and feed him so that he shall be healthy, so that he shall receive the due amount of bone, so that he shall receive the proper amount of lean, so that he shall be vigorous, reproductive, so that he shall be beautiful; and I do not believe there is a mother here who can tell what is the proper food for her child after it gets through feeding upon that food which is, of course, so perfectly adapted for the baby. As soon as the baby begins to exercise, begins to travel and use up energy, it wants something more than milk. I believe in blood, but I believe in food also. There are two or three things that Mrs. Towle said, which deserve a few minutes' consideration. If there are any two things that have been ground into me above all other things, they are feed and blood. Food makes blood; so, if we are to grow better, we have got to live better physically. Tell me the amount of butter and sugar any nation consumes per capita, and I will tell you the exact scale of civilization to which that nation has arrived. Did you ever think of that? Isaiah said, long before Christ appeared, that when He should come "He should eat butter and honey that He might know to choose the good and refuse the evil." Strange prophecy, is it not? Honey to them is sugar to us; that is what it typified—high class food. A noted scientist in England says the reason you can sell butter for thirty cents a pound when other foods from the animal producing the butter bring only a third as much, is because the butter has been strained. The butter fats have been strained through the mammillary glands; they have been once more rectified. You cannot civilize the Southern darkey until you have improved his food.

The mother has told you that you must go way back for generations and lay a foundation, so far as inheritance is concerned. I want to commence at that point. Now, the first thing is to raise an animal. That is all there is to do. There lies the baby in the mother's arms. The possibilities,

the germs, are there of a wonderful man; but as yet there is nothing to do except to raise an animal, and the animal organism is built just as that of a pig. It wants a lot of nitrogen to make the things that push and pull; it wants a lot of mineral matter—phosphate—to make a framework; it wants a lot of carbo-hydrates to make energy; it wants to be built up on exactly the same principle as a locomotive—the rigid parts to sustain the parts that push and pull. An engine stands on the track, all built; but it is a dead engine because there is no heat in it. The man stands there all perfect; but he has no heat—he is a dead man. As quick as we put in energy, heat—all energy comes from heat—he moves, he lives, he is a thing of life. All we have got to do is to take that baby and nurture its animal nature, and so build it up; and you want first to build a stomach—I don't care whether you call the animal a baby, a pig, or a cat, that is the first thing to do. Physicians have been very slow to teach us how to feed babies.

I am interested in boys; I have been working at them for twenty years, nearly all my lifetime. When the animal nature has begun to develop, what happens? You find that the little dormant bud of intellect begins to develop. At first it is no more than the dormant bud of intellect in the head of the calf or the pig; in fact, the pig has more intelligence at a day old than the baby has, a great deal more. But we find that the baby was born with the possibility of far greater growth intellectually. Now don't begin to send the child to Sabbath school, and teach it about Christ, when it is only four years old; you cannot teach it anything about Christ at that age—the Lord did not make it that way. After the child has developed physically, and then intellectually, until it can comprehend, then begin carefully and slowly on the moral. That is the only way you can make real good girls and boys. Physical first; then intellectual; and next, moral built upon them. This is all I want to say—learn how to feed. It took me twenty years to learn, and I don't know yet. When I look back and see how I was raised—and I had as good a mother

as any of you ever had—and see how the neighbors' children were raised, I do not wonder at the ignorance of those times. I should not want to raise a pig, if I wanted to raise it well, as carelessly as I was raised; and I am paying for it every day of my life. I do not blame my mother for it; I blame the educated men whose business it was to tell my mother. They had an opportunity to know better, and my mother did not.

We have struck a very great subject to-night—that wonderful thing which we call life, which no man can explain, no man understand, with all its possibilities; that thing which we call animal life, and then that next higher thing which we call human life, which we hope will go on with all its wonderful possibilities forever and forever; and forever and forever that other place which we hope to gain shall be high or low according to what we have done here. Of course there is all eternity to go on growing in, but that is no excuse for our not living right here.

I have taught a great many students. I have stood in the classroom for over twenty years, and when I get a boy I want to make a man of him, rounded up; educate him, first physically, then mentally, then morally. I do not care whether he farms or whether he railroads, or what in the world he does. There is room for him anywhere and everywhere to do good work. I never ask any questions. If he likes my kind of work I say, listen and learn, because all knowledge is valuable. The best farming lessons I got were at the workbench.

Excuse me for coming in here after your long evening's session and forcing myself upon you; but I did want to show that you had struck the keynote of all that is worth living for, the building up into beautiful womanhood and beautiful manhood our girls and boys. I wish I had taken more pains to be beautiful when I was young. If I had lived right I would have been more beautiful, a great deal better looking than I am. I believe in beautiful men and beautiful women, but I want them to forget that they are beautiful. I want

them to dress well. Dress has a wonderfully ennobling influence on mankind. Tell me how a nation dresses, and I will tell you the story of their civilization.

We are wonderfully and fearfully made. We are made with appetites, and we call them base sometimes, and we call some lower and some higher; but there are really no lower and no higher—they are the laws of life. The Lord gave me this appetite for a good purpose, and he says, every bit of food you put into your mouth shall give exquisite pleasure. Isn't that so? Doesn't it taste good—don't I enjoy it? There is tremendous enjoyment, you know, when a hungry man sits down to eat; but woe be to that man who breaks the law, who eats when he is not hungry; woe be to the man who upsets his stomach. He shall go down to the dark regions—you may call it by what name you are a mind to. Then, take the very basest of appetites. God says that it shall be a pleasure and it shall be lawful; but woe to the man who breaks the law. The very lowest appetites and passions of mankind, used legally, shall give exquisite pleasure; they shall even lift man and woman up; but woe unto you if you break the law. Now carry this right on and on. I am a teacher of the law; that is all I teach—law. The corn has a law for itself; the wheat has a law for itself; the peach trees have a law to themselves. You must raise peach trees according to the law of peach trees and not according to the law of pine trees. You have got to feed sheep according to the law of sheep and not according to the law of raising horses. Every one of these things has a law, a strict law, and different.

Now, if I break the moral law, I can repent and turn from my sins and get forgiveness—I can avoid the penalty. If we believe in Christ, that is certainly so. If I break a civil law, and have a pretty good bank account and a smart lawyer, I can get clear—I can avoid the penalty. But woe to the farmer that breaks the law of agriculture.

Here is a locomotive with the steam up, it is attached to a train of cars—everything is ready. You touch the handle,

and away it goes spinning up the track with power, beauty, and usefulness. As long as the engineer runs that locomotive according to the laws of railroads, he is all right; but just as quick as he goes to run it according to the laws of steamboats, he is all wrong—he is going to be swamped. Suppose he comes to the end of the track and says, “Why this thing is made just like a steamboat, only it hasn’t any bottom to it,” and he runs off the end of the track into the river, he gets into trouble. Suppose the steamboat man comes along and says, “I have got just such a thing as a locomotive in every way, only I haven’t any track, but I will run on a track,” and he undertakes to run that steamboat according to the law of the locomotive, he gets into trouble.

Now you will not forget these illustrations, and when you go home you will study the question of agriculture from a legal standpoint, and you will go to work according to law; you will raise pigs, and raise children, and raise peach trees according to law, and you will not let your energy be frittered away here and there, like the man who is trying to run a railroad train according to another law. There is as much difference between the law that governs the culture of wheat and corn as there is between the law that governs the successful running of a railroad and the law that governs the running of a steamboat.

After a song by the choir the meeting was adjourned to 10 o’clock A. M., Thursday.

THURSDAY, JANUARY 14.

THE PRESIDENT: It affords me pleasure to introduce to you as the first speaker this morning J. Warren Smith, assistant observer U. S. Weather Bureau, Cambridge, Mass., who will speak upon “Advantages to be Derived from the Weather Bureau.”

ADVANTAGES TO BE DERIVED FROM THE WEATHER BUREAU.

BY J. WARREN SMITH, CAMBRIDGE, MASS.

This subject of the weather is a well worn one, and one to which we always turn whether talking with strangers or acquaintances; but at the same time it is always new, especially in New England, where such a thing as settled weather is never known, and where weather changes follow each other with a rapidity and violence equaled in no other place on the earth. But for all our freedom in handling the subject and our seeming knowledge of all its changes, the people, as a whole, know very little about the science, and are generally unfamiliar with the work of the weather bureau officials. During all the first year's work of the weather bureau there was a certain mystery connected with it, which made the general public look upon the man who pretended to predict the weather, and even the observer, as being gifted with almost supernatural powers. We read the old story of the man who arranged a peculiar device whereby a wooden image would appear on the roof of his house during fair weather and disappear when it was about to rain, and how the ignorant people came to think that he was connected with the devil to be able to do this, and came near tearing down his house and putting him to death; and we feel a certain compassion for the ignorance of those days. But during the early days of our own service the establishment of a station in a Western town was followed by unusually bad weather. After a time, the people began to think that the instruments set up by the observer had something to do with it; a meeting was held and a committee of the leading citizens of the place was appointed to wait upon the observer, and ask him to pack up and leave the town; and the consequence was that his life came near being taken, the feeling toward him and, particularly, toward his little instruments was so strong. Occasionally now, a man will come into the office and look carefully around, as if in search of something; and on being approached

on the subject of his visit, will say that he is looking for the weather machine; and he will act as if he expected to find a large machine and a man with a crank grinding out the weather, or at least some instrument by which the weather is accurately foretold.

But people generally now know that no single instrument will accurately foretell the weather, no matter what the oldest inhabitant with his goose-bone says to the contrary; and they will recognize the difference between the regular weather bureau official and some Wiggin or Venner, but at the same time they know little of the inside workings of the service. So, as a representative of the weather bureau, I shall try this morning to show you something of what it consists and tell of its work.

My subject naturally separates itself into two divisions: First, the early history of the service, and its methods and systems; and second, the present and proposed plans for extending the work in the interest of commerce and agriculture.

Turning to the early history of the service, we find that by a joint act of Congress passed February 9, 1870, the secretary of war was required to cause meteorological observations to be taken, and notice given by signals and the electric telegraph, of the approach and force of storms. By order of the secretary of war, Brig. Gen. Albert J. Myer, the chief signal officer of the army, was charged with the execution of the important duty, hence its name—Signal Service. General Myer was well fitted for the undertaking by education and profession; with the capabilities of a fine scholar, an excellent officer with splendid executive ability and unlimited perseverance, success was sure. It is to the foundation that he laid by his wide policy and careful judgment that we owe our present fine service.

The summer was spent in organizing a corps of observers and locating the observing stations, and the actual work of the service began on November 1, with the recording of the 7.35 A. M. observation. This system embraced twenty-four stations, and the observations were all taken at exactly the

same moment of time and transmitted to the chief office by telegraph. The results of these observations were charted and bulletined, but the issue of a synopsis and weather probabilities were not begun until February 19, of the following year, deductions being then made as to the probable condition of the weather for the ensuing eight hours. These efforts on the part of the service were favorably received by the public and press; and the next line of advancement to receive consideration by the heads of the department was a warning to the marine and other interests of the approach and force of storms. A careful study was made of the records, then covering several months of observation, of the distribution of storms and the field that could be covered, and the results warranted the office in assuming to display wind signals at twenty stations along the great lakes and on the Atlantic and Gulf coasts; to-day there is a line of these display or storm-warning stations stretched from Galveston to Eastport, and from the western extremity of Lake Superior to Oswego.

This closed the first year's work of the weather service and was the nucleus of what is now the finest weather service in the world; we are behind some of the European services in our study of the climate and some of the special weather phenomena, but far ahead in our system of observations, our manner of collecting the data, and in putting the information before the public. We now have the regular stations with continuous self-recording instruments scattered over the entire United States; we have the system of wind-warning stations along the entire coast; we have over 2,200 voluntary observers recording the daily temperature and precipitation; hundreds of crop correspondents reporting weekly the exact conditions of each crop and the effect of the weather upon it; a special department for the study of the cold waves which sweep from the far northwest down over our country, and we can herald their approach from twelve to forty-eight hours before they reach us, and thus give warning to growers or shippers of perishable products; we have an extensive system for disseminating these frost warnings, and for displaying the daily

weather forecasts to the public from twenty-four to thirty-eight hours in advance. It was the issue of these probabilities or weather forecasts that gave rise to the name "Old Probabilities," or "Old Prob," who is now known by every class of people in this and adjoining countries.

The work since that first year has had a steady growth; General Myer laid foundations that have never needed taking up and rebuilding; the number of stations have been greatly increased, the hours of observations have been several times changed, and the manner of putting the information before the public has been greatly improved, but the principle of observations and the whole general scheme remains practically the same. Generals Hazen and Greely both put valuable work into the service, and its growth during their administration was strong and rapid. General Rusk and Professor Harrington are at present pushing the advantages more and more into the agricultural districts, and are making its benefits felt in places where its influence has never before been known. There are at present about 160 of the regular weather bureau stations scattered over the United States, nearly all provided with continuous self-recording instruments and all reporting twice daily by telegraph to the central office at Washington, the exact weather conditions. The principal elements of observation at all these stations are air pressure as indicated by the barometer, the temperature and humidity of the air, direction and force of the winds, kind, amount and direction of clouds, rainfall, if any, character of the sky and state of the weather. These observations are made twice daily; at 8 o'clock A. M. and P. M., while the observer has to keep on the lookout all the time for any special weather phenomena. (The speaker then gave a brief description of the instruments used at these stations, saying that the most important of these is the barometer, because upon the changes which it indicates depend all our weather and storms.)

It has been found that one essential in taking these observations is rigid system, promptness, and correctness; only the most skilled men are allowed to make observations, which

must all be taken at precisely the same time. If you could have taken a bird's-eye view of the country this morning at about two minutes of eight you would have seen the observers all over the country climbing the stairs to their instrument shelters. It is necessary that the results of these observations shall be in the chief office in the least possible time, and at twenty minutes past eight the observation must have been taken, the message enciphered, and filed at the local telegraph office, and when there it takes precedence over all other matter, government or otherwise, except in time of war. Even the president's message must wait for these telegrams. It takes but a moment to send them, and a few minutes' delay may endanger millions of property or cost many lives. As fast as the messages are received at Washington the charting is begun, from which the forecasts are made.

Part of the data is sent from there to the local offices where maps are also made, and, as we have the maps made at Boston here in New England, we will turn our attention to those (maps shown and explained as well as colored charts showing the movements of storms and the different classes). These charts are an outline map of the United States and Canada, and on them are indicated the stations from which reports are received. At each station the state of the weather is shown by symbols, and the direction of the wind by an arrow; the current air pressure, temperature, and velocity of the wind, and either the maximum or minimum temperature for the past twenty-four hours. In the column at the right the amount of precipitation is given, and at the left the weather forecasts and synopsis. Across the map are drawn isobars or lines of equal air pressure for every one tenth of an inch as indicated by the readings of the barometers, and the centre of lowest pressure is marked low, and that of the highest marked high; these may be likened to a series of rather rounded atmospheric waves, the crests being the highs and the depressions the lows. In our latitude these waves move in an easterly direction at the rate of about six hundred

miles per day ; the alternating highs and lows being several hundred miles apart. High winds and rain, and, if cold enough, snow, usually precede the low areas, often extending to a distance of six hundred miles ; in advance of the low centre the winds are generally southerly, and consequently bring high temperatures. As the centre passes to the east of a place the winds shift to the west and north, and bring clearing skies, and, if it be winter, cold waves. The fact that the winds always blow toward a storm or low centre is an important law, and one on which our power to forecast depends very much.

There are three general classes of storms which affect our weather in New England, and as nearly all the storms that occur in the United States belong to one of these classes you can easily understand that over eighty per cent of all the storms that occur in the United States affect our weather here in New England. The first class move from the northwest down over the Lakes, and down the St. Lawrence valley, passing to the north of New England. It is with the southerly winds blowing into these storms that our hot, muggy days occur in summer and the days of unseasonably high temperatures in winter, and it is in these hot, southerly winds that most of our thunder storms and tornadoes occur. The second class move from somewhere in the Lower Mississippi valley across the Middle States, and pass to the south of New England ; these give us cold north-easterly storms in summer and heavy snow storms in winter. Such a storm was the great blizzard in 1888, and such a storm was the severe storm of January 6 to 10, 1886 ; and it was the cold wave following it that did so much damage in all the Southern States. Many people were frozen in Galveston bay, and more than \$500,000 damage was done to oranges and groves in Florida. The third class of storms, which are the most severe of all but fortunately less frequent, are the West India hurricanes, which sweep up our coast, generally in the fall. They form somewhere in the tropics, and move north-westerly till they recurve somewhere along our southern coast. These storms

are dreaded along the coast because they are so severe and come so unwarned. Sometimes they move clear into the Gulf of Mexico before curving, and sometimes only the western edge of the storm is felt on our coast, as they swing far out to sea; they are generally preceded hours, and sometimes days, in advance, by immense waves which come rolling in, indicating the advance of a terrific storm which may be hundreds of miles away. By noting the position of these paths you will readily understand why New England never has settled weather, and why clouds and sunshine, cold and warm weather, alternate, almost with the regularity of the swing of a pendulum.

In addition to these regular weather bureau stations which are scattered over the United States, most of the states and territories now have a branch weather service, or, as they are called, state weather services.

Much attention is being paid at present to the study of climate in its relation to agriculture and health in both this and other countries. The question arises sometimes, why a certain fruit will not flourish in this valley when in that one it grows abundantly, or why a food plant will grow and come to maturity on this hillside, while on that the crop is a failure. The two places are seemingly alike in every way; the soil, so far as we can determine, the manner of cultivating, and the fertilizers applied do not differ in the least, and so we consider that the weather or climatic conditions must differ. We wonder why, in some years, our corn, potatoes, or grain will be very good, while the next year, under the same conditions as far as the soil is concerned, they will be a failure; and we in some indefinite way lay it to the weather, and say it was too warm or too dry, seemingly without caring or taking the trouble to learn for future use how warm or dry it was, or just how warm and wet it must be to insure certain crops. During last year the apple orchards throughout New England showed some peculiar variations in regard to the amount in different places. In one field, town, or county almost no crop was secured, while in the adjoining ones

fruit remained unpicked on the trees. Who can tell the reason for this? Was it due to the late frost last spring, which struck harder in some places than others? Who can tell whether the prevailing epidemic—la grippe—is caused by the unseasonably high temperatures which we have had in December, and who can say it is not? In the Western States, especially, it is important to know, before settling in a place, whether the crops will be moderately successful every year, or whether they will be dried up six years out of seven and flooded out the other year. It is also important to know that the climatic conditions are favorable to good health, without having to learn from sad experience. But the meteorological records of any length are generally so meagre, unreliable, and widely scattered that any investigation in this direction is greatly hindered and in some places rendered impossible. By many no care was taken to secure reliable instruments or to insure the accuracy of those in use, and so much hard work in carefully recorded data has been thrown away.

The province of the state weather service is to systemize the work of those who are already taking observations and to organize new stations in the uncovered sections of the States, as well as to collect the results and issue them in a practical form. There are at present about forty state and territorial services, and over 2,200 voluntary observer stations scattered throughout the several States. Most of the States appropriate a sum for necessary expenses, and a director and other officers are appointed by the Legislature or governor. The old signal service and the weather bureau, since the transfer to the agricultural department, have sustained and aided these branches in every possible way. They furnish an experienced man to do the work of organizing stations and tabulating data, and they provide necessary supplies. Each State now has its voluntary observers scattered over the State, one in every county and sometimes several; and it has been found that in no other way can the climate of each State be studied with such good effect in relation to agriculture and the sanitary conditions and advantages.

In New England we have about one hundred and sixty of these voluntary observer stations, the observers being public spirited men or women, most of whom own their instruments; and all report voluntarily to the New England Meteorological Society, which is doing the state weather service work for all New England. This society was organized about six years ago, to promote the study of New England climate and its special weather characteristics, and has gradually taken up the weather service work. We establish stations, collect data, and issue bulletins for New England, simply supplementing the work of the National bureau for these six States as the state weather services do for their own States.

Is our climate changing? Do we have colder summers and warmer winters now than our grandfathers were blessed with? Do we have as much snow now as used to fall here? All are very important questions, not only scientifically but practically, and they can be answered only by long and continuous observations at a large number of stations. It has been remarked that not only does each State have a different climate from the adjoining one, but that each town and each man's farm has a climate peculiar to itself; and that the study of the climate on your farm and its influence on the vegetation there will not apply to your neighbor's. Now we cannot hope to establish a place for the study of the climate on each man's farm, although there is no question but each man would be benefited if he would pay more attention to the study of climate in relation to his several crops. We can only urge the establishment of such stations in the sections of New Hampshire not already covered. The instruments used are the maximum and minimum thermometers and the rain gauge. The whole set costs about thirteen dollars. We wish some school or agricultural body to purchase a set of instruments, and put them into the hands of a careful man; or, in places where there are no observations being taken, arrangements can be made to loan a set to a reliable man. In return for the work, we will send the monthly and annual bulletins

of our society, the "Monthly Weather Review," and annual reports of the weather bureau, the most important publications of the agricultural department, and the Boston daily weather map. The last two have recently been added to the list, and shows that the bureau desires to recompense the observers in part for the valuable work which they are doing.

The crop-corresponding stations are not so elaborate as are those which we have just been talking about; indeed, no instruments are needed. We simply send the blanks to reliable men in any town who will fill them out and mail to our office weekly, giving the weather conditions, the effect which it has had upon the crops, and the conditions of the several crops in their neighborhood. The results are condensed and telegraphed to Washington, and there combined with other reports from other States and issued as a weekly crop bulletin. This bulletin gives charts showing whether the temperature and precipitation has been above or below the average for the week, and a brief outline of the conditions of the crops over the entire country. Our own reports are also bulletined at our Cambridge office weekly, and sent to observers, newspapers, and farmers' clubs, wherever they are desired and will be used. This is considered the most practical, and is the most highly complimented work which the state service can do. These bulletins are a source of reliable information for all interested in agriculture, following up the season from week to week, so that an excellent estimate can be given at any time relative to the crops of any county, state, or country at large. The reliability of these bulletins depends, of course, upon the number of correspondents, and we wish one during the coming crop season in every town in New England; simply a man who is familiar with the crops of his neighborhood, and who will fill out the blanks weekly for the information which we can give him through the bulletins. The work takes about fifteen minutes each week.

The weather bureau has always been the butt of many jokes, and especially regarding weather forecasting. How many times have we heard people say, "Why, you fellows do

nothing anyway but guess at the weather," and they will refer us to some old man who will tell by the tip of the new moon the weather for the month, or by the thickness of the corn husks the severity of the coming winter. Such people make no distinction between the regular weather bureau official who carefully and minutely tries to give the exact weather and temperature for from twelve to thirty-six hours in advance, basing all their forecasts on the movements of the areas to the west of us as shown on the daily weather maps which I have shown you, and the astronomical meteorologist who pretends to read the stars and predicts the storms months in advance by saying, "about this time look out for a storm," and if he gets a storm within a week of the date mentioned he considers his prediction verified. We have seen how in our latitude the storms form and pass across our country in two or three days, and we must see how impossible it is to accurately predict the weather for weeks or months in advance. I mean impossible with our present knowledge of the science. The time may come when that will be possible, but it is not yet.

The farmer is not so much interested in the large storms which traverse our country as he is in the ordinary weather changes from day to day, and it is this information which we propose to give in the daily weather forecasts. These forecasts are made at Washington at about 10 A. M. and P. M., the former are received by the displayman about noon, and cover the probable weather and temperature until 8 P. M. the next day; and the latter which are received early in the morning covering until midnight of that day. These forecasts which are received about noon indicating the weather for the next day, must be of great value, during the harvesting season especially, when so much grass is cut in the afternoon. We have been sending these forecasts to towns in New England where the display is desired and will be beneficial, and where a set of flags will be procured and displayed for the benefit of the public. Five flags are used in the display, the cost of which are from seven to eight dollars. The

signals can also be given on a mill whistle there being a regular code for the purpose. The forecasts are being sent to telephone exchanges in some sections and distributed by them to all their patrons. This is a commendable plan and no corporation can benefit its patrons more, and at the least expense, than by transmitting the daily forecasts free of charge.

In addition to these daily forecasts, we telegraph the cold wave or frost warnings usually from twelve to thirty-six hours before they reach us; these are probably not of so much value in New Hampshire as in the tobacco and cranberry districts of southern New England, but there must be some industries that could be benefited by a knowledge of a coming frost. The plans which have been adopted in other States and which we are completing in the tobacco and cranberry districts, are to establish a number of centres, where some man, preferably a tobacco grower or interested person, will display the warning flag and will disseminate the warnings throughout the adjoining country by whatever means is best adapted to the community.

The flag used for the frost warnings is the cold-wave flag of the regular display; it will cost about \$1.50 or can be easily made. It is six feet square and is a white flag with black centre.

After the warnings are received different methods are in use for protecting from the frost. In the cranberry districts many bogs are flooded, in the great wheatfields of the Northwest fires are built in the open air, and in the tobacco sections fires in the open air and stoves are used. This method is also in use in the Florida orange districts; there they have a stove-like arrangement in which they burn tar; the tar is in a tank over the flames and drips down onto the fire, this causes a thick smudge which drifts slowly over the fields and around the trees. This could easily be put into practice in our gardens and among the fruit trees, and I should think to advantage.

A letter addressed to the New England Meteorological

Society discussing any of these plans or asking for more information will be promptly answered, and we invite correspondence. Can any arrangements be made for sending monthly reports from the uncovered sections of New England? Will anyone here, or who gets a report of this meeting, send us weekly crop reports? If the daily forecasts or frost warnings are desired at any place an effort will be made to furnish them. In truth, the bureau desires to fulfill the conditions of the bill which transferred it to the agricultural department, which was to extend its benefits in the interests of agriculture; but to do that we must have an expression of your wishes, learn what you want, then discuss the best methods of presenting it to you. We desire to get into closer sympathy with the agricultural colleges, state boards of agriculture and granges, and through them reach the people.

In conclusion I wish to say that I am a native of New Hampshire and am interested in New Hampshire matters; I am interested in your schools and colleges, in your agriculture, and above all in your boys and girls. I am sometimes approached by the young people in my own town and asked to tell them from my short experience what they had best try to do for a living, and my answer always is, "Boys, stick to the old farm," and "Girls, stick to the farmers' boys."

THE PRESIDENT: We will now introduce Dr. W. T. Russell, of Nashua, who will speak upon "Tuberculosis."

TUBERCULOSIS.

BY W. T. RUSSELL, V. S.

Tuberculosis may be defined as a chronic disease, characterized in its common form, anatomically, by a morbid product within the air cells, in a large majority of cases progressively increasing and extending, having a tendency to cheesy degeneration and liquefaction, forming collections of puriform liquid, which evacuating by ulceration into the bronchial tubes are followed by cavities. These changes are accom-

panied by more or less induration from morbid growth, and by granules of greater or less dimensions, called tubercles, due to the presence of the bacilli of tuberculosis. These changes may attack other parts of the body, as the liver, kidneys, intestines, brains, and spinal cord; also the muscles, larynx, and spleen.

The wide distribution among human beings, as well as the large percentage of animals affected, has led to a great activity in the study of the disease in all its bearings, and the most important questions now before the public are:

1. How can the disease be restricted among domesticated animals?

2. Are human beings affected by consuming the flesh and milk of tuberculous animals, and if so, to what extent?

Before briefly discussing these two questions, a few preliminary subjects demand our attention, and I shall first speak of the general character of the disease. As its name implies, it is characterized by the formation of tubercles in different parts of the body.

They consist of cellular elements and tissue crowded together, and owing to the absence of blood vessels, they soon die for want of nutriment, and are converted into cheesy masses with calcareous particles intermingled. The increase in size crowding upon and destroying the surrounding tissue, and subsequent breaking down into caseous matter, may be considered the chief injury inflicted upon the body. The infective agent is due to the bacillus, discovered by Koch in 1882, and fully demonstrated by him as the specific cause of this malady.

This minute animal, as it might be called, is a slender, rod-shaped body from $\frac{1}{17000}$ to $\frac{1}{7000}$ of an inch long, is found within the tubercle in great numbers, being detected by certain microscopical and bacteriological methods. Within the tubercle, these bacilli form certain resistant bodies, called spores, which enable the organism to resist destructive agents such as heat, cold, moisture, dryness, and putrefaction for a reasonable length of time. To prove this, Koch has demon-

strated, beside many others, that the bacilli found in the various forms of tubercular disease in man and animals, may be cultivated in blood serum at body temperature. The bacilli grown outside the body from different animals, present the same appearance, and when animals are inoculated, the same malady is produced, having all the characteristics of the original disease from which the tubercle bacilli were obtained.

This proves conclusively that this particular bacilli causes tuberculosis in man and the lower animals. I shall now briefly discuss the disease as manifested in man and the lower animals.

The disease in man presents many various forms, the most common being tuberculosis of the lungs, known as phthisis, or consumption, although it may appear in various other organs. Scrofula in children has been demonstrated to be a form of the disease, involving the lymphatic glands. Mesenteric and meningeal tuberculosis of the young, is not uncommon, and may be frequently traced to using milk from infected cows.

The tubercle bacilli are coughed up from the diseased lung in large numbers, especially in the advanced stages of phthisis. This sputum is thus endowed with highly infectious material, and by many of the best authorities, is regarded as the chief agent in the spread of the disease, and statistics show that at least ten per cent of mankind perish annually from this trouble. Tuberculosis in the horse is a rare malady, and the cases on record are very scarce. It is not unlikely that, owing to the similarity between tubercular and glanderous lesions it may have occasionally been mistaken for that disease, and it may be said to generally resemble, when found, that in cattle.

Trasbot reports two cases, one in 1878, the other in 1884. The disease was very slow and insidious in its development, accompanied towards the end by great emaciation and fever.

Shrotman observed a case in which the disease began as pleurisy. The temperature and pulse fluctuated more or less, difficulty in breathing and a general wasting away, the animal dying in little over a month.

Schindelka observed a case in which the disease began with bronchitis; among the symptoms noticed were difficult breathing, cough, fluctuating pulse, loss of appetite and great weakness. In these cases the bacilli must have entered the system with the inspired air so frequently the starting point in human tuberculosis.

A. Peters reports the case of a dog that had required the filthy habit of eating the sputum coughed up by a consumptive member of the family, infections in dogs not infrequently being due to this habit.

Among goats and sheep, however, the disease is quite rare although a few cases have been reported from time to time. Swine may be infected by consuming tuberculous milk, but in regard to the frequency the statistics are not very abundant. In Baden, two per cent of all hogs killed in eight years were found tuberculous. In Berlin, of all swine slaughtered in 1883, 1884, and 1885, five to nine per cent were similarly affected.

Fowls and birds of the air are found affected with tuberculosis. Nocaud reports a very instructive case among poultry, due to feeding on the expectorations of a phthisical man, he having charge of the poultry-yard as his feebleness did not permit hard work. Three months after he began to do this work the first fowl died, and in all ten succumbed. Subsequently, he found it among the fowls of a slaughter-house which were being fed on the organs of cattle which could not be sold in the market on account of the disease.

TUBERCULOSIS IN CATTLE.

This is unquestionably the most important phase of the subject. The disease in its various forms has been known for many centuries, and legislative enactments having reference to the destruction of diseased animals date far back into the middle ages. The opinions entertained regarding the nature and cause varied much in different periods and markedly influenced the laws and relations in vogue.

In the sixteenth century the disease was considered identical

with syphilis in man, in consequence whereof very stringent laws were enacted, making the destruction of affected cattle compulsory.

In the eighteenth century this erroneous conception was abandoned and all restrictions against its use were removed. Since then, however, the tide has again turned, and destruction is advised. The particular opinion held at any time, concerning the nature of this disease, usually furnished it with a name. There are in most languages a large number of terms which have accumulated.

The cause of the disease in cattle, as perhaps in all other species, may be considered as two-fold in its nature.

The tubercle bacilli and predisposing causes which prepare the way for it, the way in which the tubercle bacilli may be introduced into the body are various. The germs may enter the lungs by inhalation, or with the food, and the frequency with which it may be found in the lungs indicates that they are, in many cases, the primary seat of the disease. The milk of affected cows is a source of infection for sucking calves. Calves are sometimes born with the disease; in such cases the bacilli passes to the foetus during gestation, and it has always been maintained that it can be transmitted from one to another during coition.

It seems more difficult to understand how the tubercle bacilli are transmitted from one to another in stables and pastures, when there is so small a discharge of bacilli; however, it has been noticed that the introduction of a tuberculous cow was followed by infection of the other animals in the same stable or pasture. The causes which are predisposing are, unsanitary conditions, such as over crowding, poorly ventilated, and poorly lighted stables, the feeding innutritious food, and overfeeding and continued milking during gestation. Conditions that injure the lungs, such as the inhalation of dust and smoke, producing chronic inflammation of the bronchial tubes, with abundant secretion and subsequent pneumonia. Another cause is the improvement of stock by continual in-breeding and the consequent inheritance of certain

constitutional traits of a debilitating nature,—and I would state here that the predisposing causes determine, to a great extent, the frequency of the disease; for instance, animals living in low lands are more subject to it than the robust breeds of the mountain regions, and likewise animals in pastures are less susceptible than those kept closely housed. Animals subject to special feeding, as dairy cows, those of distilleries, breweries, and other manufactories having waste available food are extremely susceptible to the disease. As the amount of infection is greatest about large cities, of course it is found there in greatest numbers. Statistics indicate that the percentage of cattle attacked, varies greatly. From Bavaria we learn that from 1887 and 1888 the number of tuberculous cattle was 16 per cent, or 16 head in every 10,000. The disease, according to age and sex, was as follows:

In 1,000 steers	.	.	.	.	5.84 per cent.
In 1,000 oxen	.	.	.	.	1.39 “
In 1,000 cows	.	.	.	.	2.50 “
In 1,000 yearlings	.	.	.	.	.35 “
In 1,000 calves	.	.	.	.	.09 “

In Baden, where meat inspection is practiced in all communities, it was found that there were but eight tuberculous animals in 1,000, and in those communities where chiefly cows were slaughtered, the number rose to 15 in 1,000. At Gottingen, out of 1,783 cattle slaughtered during 1886 and 1887, 18 or about 1 per cent were found diseased. At Munich, during 1888, 1.6 per cent of adult, and .15 per cent of the calves were affected. At Tittua, one herd contained 26 per cent of tuberculous cattle. In France, according to Arloing, there are, on the average, 5 affected in every 1,000, or $\frac{1}{2}$ per cent. In Belgium, according to Van Hertsen, from 1 to 26 per cent, according to locality. At Copenhagen, according to Bang, during 1888, the rate was 6 per cent, for cows alone it rose to 16 per cent. In the Argentine Republic, according to Eren, tuberculosis seems to attack the recently imported stock from 10 to 15 per cent, while of natives only

$\frac{1}{2}$ of 1 per cent are found affected. In our own country, cattle slaughtered at Baltimore, by the Bureau of Animal Industry, were found affected to the extent of $2\frac{1}{2}$ to $3\frac{1}{2}$ per cent. Owing to non-inspection in this country, until recently, however, further figures are at present unavailable. It is evident that statistics must vary greatly. The territory from which cattle are obtained, and the tendency to send suspicious animals to the market may raise the percentage, especially in large cities; and it is in the vicinity of large communities where the concentration of cows for dairy purposes brings into play the two factors most necessary for the development of the disease, namely, importation and concentration of the virus, and increased predisposition on account of poor feed, unsanitary conditions, and consequently greatly lessened vitality.

I shall now give briefly the characteristic lesions of the disease and their distribution through the body, and then pass on to the symptoms. The changes which are found in tuberculosis are limited in a large number of cases to the lungs and lining membranes of the chest and abdomen. Statistics have shown that in about one half of the cases, both lungs and serous membranes are affected; in one third, only the lungs; and in one fifth, only the serous membrane. At the same time the lymphatics near the diseased parts are usually involved, and sometimes the coverings of the brain and the spinal cord. Although the disease may remain restricted to a single organ, it is now and then found affecting all parts of the body. In the lungs the changes vary according to the age and intensity of the diseased process, usually commencing with the appearance of minute tubercles. These are not larger than a pin's head, firm, yellowish-white, opaque, and appearing on the surface or in the substance of the lung. Later on a change takes place by which the contents become cheesy and partly calcified. When these become sufficiently numerous to unite, larger masses are formed, and these undergo the same retrogressive changes of caseation and calcification. In addition to the tubercles, other changes take place. There is usually present, bronchitis with abundant

catarrhal secretion; this fills up the smaller tubes, and the lung tissues supplied with air by these tubes collapse. Subsequently this tissue becomes filled with the yellow, cheesy matter which greatly distends the air tubes and air vessels, producing a low form of broncho-pneumonia. The connecting tissue around the air tubes, between the lobules and around the tubercles, may form upon the mucous membrane, and ulcers of a malignant type result from their breaking down. The inflammatory irritation which the growth of the tubercles produces on the surface of the lung, sometimes gives rise to adhesions of the lungs to the ribs and diaphragm, so firm and extensive that they appear grown to the chest wall; and when the lungs, in advanced stages of the disease, are cut open, we observe large yellow masses, from one fourth to three inches in diameter, of a very firm density, in which calcified gritty particles are imbedded, surrounded by firm bands of tissue. The neighboring lung tissue, when collapsed and involved in broncho-pneumonia, has the appearance of dark red flesh. The air tubes are distended with a frosty, yellow, cheesy mass, and the larger bronchi may be sacculated, owing to the presence of the foreign contents. The disease usually involves the bronchial lymphatic glands situated at the bifurcation of the bronchial tubes.

The changes are the same as in the lung tissue and frequently attain an enormous size. The tubercular formation on the serous membrane, which may go on at the same time with the lung disease, or separately, begins as very minute grayish nodules which give the smooth lustrous membrane a roughened appearance. These minute tubercles enlarge and project above the surface of the membrane as wart-like masses, ranging from the size of a pea to that of a hen's egg. They are also sprinkled over the ribs, diaphragm, walls of the abdominal cavity, and the omentum. The size attained by these tumors and new growths is well illustrated by the fact that frequently both lungs will weigh from fifty to eighty pounds, and the bronchial glands, which in health are not larger than a horse chestnut, have been found to attain a weight of over ten pounds.

In the abdominal cavity, tubercles affect the liver, varying in size from a pea to a hen's egg, usually appearing on the surface, projecting above it and dipping down into the liver substance. The smaller ones are smooth, firm, lobulated, yellowish and gritty on section, the larger ones soft, and containing yellowish, cheesy pus. Similar changes take place in the spleen, kidneys, ovaries, uterus, testicles, and mesenteric glands of the abdomen. Tubercular affection of the intestines is also noticed, although not so often as the other forms. Tubercular disease of the udder in cows has received attention of late from sanitarians, owing to the infection of milk with the virus. The udder becomes swollen uniformly and quite firm. This swelling, which is painless, usually attacks but one quarter, rarely two, these being most frequently the hind quarters. The larger milk ducts contain cheesy particles in which are many of the bacilli; later on large nodules can be felt within the udder, which undergo the changes to which tubercles are subject. It may grow hard to the touch as the disease progresses, and increase in size up to forty pounds. The milk, at first normal, later on becomes thin and watery, being mixed with flakes and numerous tubercle bacilli.

In regard to the frequency of the processes in the different organs, the following table of statistics of the disease in Bavaria and Baden may serve as a guide :

Bavaria.

Tuberculosis of lungs and serous membrane	41 per cent.
“ of lungs alone	33 “
“ of serous membrane alone	17 “
“ of other organs	8 “

Baden.

Tuberculosis of lungs alone	21 per cent.
“ of serous membrane alone	28 “
“ of both combined	39 “
Generalized	9 “
Tuberculosis of sexual organs alone	3 “

SYMPTOMS.

The beginning of the disease usually passes unnoticed, as it is very slow, insidious, and rarely accompanied by fever. When the lungs are involved, a dull, short cough is noticed, which later on becomes prolonged, convulsive, and sometimes very troublesome both to owner and animal. The cough is more frequent in the morning after movement, eating and drinking. The breathing varies only when considerable of the lung tissue is affected, and is labored, and accompanied by active movement of the chest and nostrils. Discharges from the nose are rare, and frequently absent, sometimes, however, when the tubercles have broken down and when the air tubes become filled with puriform masses, coughing will dislodge these and cause their removal. The general effect on the body is at first slight, in fact, animals may remain in flesh for a considerable time, but as the disease progresses, loss of flesh and appetite and paleness of the mucous membrane become manifest. These are accompanied by a gradual decrease in the supply of milk, there is frequently also a tough, dry skin with staring coat. Digestive disturbances are indicated by distension of the rumen with gas, colic and diarrhœa alternating with constipation. The animal generally dies from exhaustion after a period of sickness which may last for months or even years.

In the abdominal organs it is signalized by abortion and abnormal sexual manifestations. When the brain is affected there may be convulsions, unconsciousness, paralysis, as well as peculiar movements in a circle and an oblique position of the head.

Lydtin gives the following symptoms as taken from a Swiss sanitary order. "A dry, short, interrupted, hoarse cough, which the sick manifest especially in the morning at feeding-time, still more after somewhat violent exertion. At first these animals may be full-blooded and lay on a considerable amount of fat when well fed. As the disease progresses they grow thin and show more and more those appearances which indicate diseased nutrition, such as a staring, lusterless,

disheveled coat, dirty, tense skin, which appears very pale in those regions free from hair. The temperature of the skin is below normal. The loss of fat causes sinking of the eyes in their sockets. They appear swimming in water and their expression is weak. The cough is more frequent, but never or very rarely accompanied with discharge. The body continues to emaciate even with plenty of food and an appetite, so that the quantity of milk is small. At times, in the early stages of the disease, still more in the later stages, the diseased animals manifest considerable tenderness when pressure is applied to the front or sides of the chest, by coughing, moaning, etc. Often all symptoms are wanting in spite of the existence of the disease."

A disease so varied in its attack upon the different organs of the body, and in the extent of the disease must necessarily lead to some mistakes in diagnosis. Tuberculosis as a rule does not end in recovery and treatment is useless, preventive measures being the only reliable ones. They consist in removing and isolating the suspected ones, and destroying them when there is sufficient evidence that the disease exists. The milk of such animals should not be used in the feeding of calves, swine, or other domesticated animals. Concerning the use of flesh and milk for human food, I shall speak later on.

The bodies of tubercular animals should be burned or buried, in fact, the diseased and their remains should be regarded as a menace to the health of man and animal, and should be treated accordingly.

IN RELATION TO PUBLIC HEALTH.

Tuberculosis, being restricted more or less to thickly settled communities and causing in general but slight losses when all the cattle in the country are taken into consideration, is not a very serious matter from a financial point of view. The interest is due to quite different causes. The great mortality of human beings from this disease, often amounting from ten to fourteen per cent, has raised the question in all civilized com-

munities as to how far animal and especially bovine tuberculosis is to blame for this mortality. The medical and veterinary professions have approached this problem with zeal, and much has come to light within the last few years to help us out of the difficulty. If the disease is transmitted from animals to man, how does it take place? As very few people come in direct contact with tuberculous animals, it must be, if at all, either through the meat or milk or both that the virus enters the system. The question has thus narrowed down to the food products furnished by cattle. Is the flesh the bearer of the infection? This question has become very urgent in the Old World where meat is a scarce and expensive article of food. It is argued there that if it can be shown that in the majority of cases of tuberculosis the muscular system is free from infection, there is no reason why the meat should not be sold under certain restrictions. This may be separated into two divisions:

1. How frequently does the disease invade those parts of the body which are used as food?

2. When the disease is manifestly restricted to the internal organs, do the bacilli circulate in the blood and lymph, and can they be detected in the muscular tissue?

1. Disease of the bone is not unknown although rarely is it the case. According to Walley, it appears chiefly in the spongy bones of the head, backbone, and long bones of the limbs. Occasionally, the ends of the bones, where covered by the synovial membranes of the joint are covered with tubercles. The muscular system is rarely the seat of the disease.

2. Whether the bacilli are found independent of tubercular deposits, is a question which must be approached experimentally. There is on record a great difference of opinion, some authorities considering all flesh from tuberculous animals, as unfit for food, while others hold a contrary view. Opinions, however, are worth little unless backed by positive evidence such as afforded by inoculation; the opposite views of the older authorities are due partly to the fact that they fed the material

to be tested to different species of animals, some of which are now known to be insusceptible to such feeding, partly because nothing was known of the presence or absence of the bacilli in the material fed. It is well known among pathologists of the present day that there is much variation in this respect. The growths may contain enormous numbers of the bacilli or they may contain very few. The number seems to vary with the age of the diseased process, with its location, and the species of animals from which it is obtained.

Moreover, feeding even susceptible animals is at best a method of doubtful certainty on which little reliance can be placed.

There are, however, a few experiments on record trustworthy inasmuch as they are made according to the approved method of injecting the suspected material directly into the peritoneal cavity of guinea pigs. Kartner under the direction of Bollinger, inoculated animals with the juice from the flesh of tuberculous animals. The flesh of twelve cows being used for this purpose. Sixteen guinea pigs were inoculated, and all remained healthy. Nocaud expressed the juice from the heart muscles and injected from ten to twenty drops into the peritoneal cavity of guinea pigs, but none of them showed signs of the disease.

But all experiments are not equally negative. Chaveau and Arloing inoculated ten guinea pigs with the juice from the muscles of a diseased ox. Of these, two became affected. Galter obtained five positive results out of twenty-two series of inoculations. Arloing concludes from this that one out of every ten cases contains baccilli demonstrable by inoculation. The stage of the disease determines, to a great extent, the presence or absence of the bacilli in the muscular tissue. In cases far advanced, they may be more abundant, hence more easily detected. Thus Steinheil inoculated ten guinea pigs from the flesh juice of nine persons who died from the disease and positive results were obtained in every case.

Concerning the infectious nature of milk from affected cows, authorities universally agree that when the udder itself is in the

slighest degree involved, the milk possesses infectious properties and is therefore dangerous. Unlike other affections of the udder, tuberculosis of this does not at once change the appearance and the quality of the milk secreted. Bang states that for months after the disease has appeared, the milk is normal in appearance and may be used and sold without arousing the suspicion of the owner. There is, therefore, so much danger involved in this disease that the necessity for careful inspection of dairy cows seems more urgent than ever before. Authorities are, however, not fully agreed as to whether the milk from tuberculous cows in which the udder is apparently not invaded by the disease, should be considered dangerous or not. Some scientists believe that the milk secreted by healthy udders is never infectious, even when the lungs or other organs are affected; that in other words the tubercle bacilli are rarely, if ever, separated from the changes which they produce; that the udder itself must be diseased before tubercle bacilli can be found in the milk. Experiments made with the milk of cows in which there were no indications of udder disease do not bear out this theory, as figures given below will show. Some authorities, among them Nocaud, still believe that the udder is diseased when the milk is infected but that it escapes observation. However this may be, the fact that the udder is diseased and escapes observation casts suspicion upon all milk from tuberculous animals. That the suspicion is not without foundation some recent investigations may here be given as evidence. Under the auspices of the Massachusetts Agricultural Society for the promotion of agriculture, Dr. H. C. Ernst, assisted by Dr. Peters, made some experiments to test the character of the milk from cows having no recognizable udder disease. The milk was examined microscopically and the bacilli demonstrated in the milk of ten out of twenty-six cows, or 27.7 per cent. Guinea pigs were also inoculated with the milk from fourteen cows and the milk of six of these, or 42.8 per cent, were found infected.

Hirschberger under Bollinger's direction made a number of experiments to test the infectious properties of milk from

affected cattle. Of twenty cases the milk of eleven, or fifty-five per cent, produced the disease when injected into the peritoneal cavity of guinea pigs. Of five cows highly tuberculous, the milk of four was affected. Of six cows moderately affected, the milk of four was infectious. In nine cows slightly tuberculous, the milk of three was infected and the disease was entirely confined to the lungs. Concerning the infection of swine by the milk from tuberculous cows. I shall quote the following statement:

“The owner of a valuable herd of cows, finding that a large proportion of them were tuberculous, so large a proportion indeed as strongly to suggest infection by association in the sheds, withdrew his milk from the market and used it, unfortunately, without boiling, for fattening his pigs, of which he has a large number, and on which he prides himself not less than on his cows. The result has been that the pigs have, almost without exception, been affected with the disease to an extent that has necessitated the slaughter of the whole stock. Another point of practical interest is, that he has not been able to discover nodules or other indications of localized tubercle in the cows' udders, a condition still held by some to be necessary to render the milk capable of transmitting the disease.”

Bollinger has shown that it is more dangerous to consume the milk from a single cow for a period, than to take the mixed milk from many animals. Any virus contained in the milk of one cow is thus diluted, and the few remaining bacilli may be harmless. Thus, guinea pigs inoculated with mixed milk remained well. Infected milk lost its virulence in one case when diluted with forty parts of water; in another with fifty parts of water; in still another the milk did not lose its infectiousness until diluted with one hundred parts. If any conclusion could be arrived at from the present amount of evidence, it would be to throw suspicion on both the flesh and meat of tuberculous cattle. These may, in any given case, be free and they may not be. Fortunately we have at our command a means of destroying any suspected virus that

may be in it, and that is, boiling it for five or ten minutes,—that length of time being quite sufficient. The dangers inherent from milk are greater for children, who are more susceptible, and whose food during the earlier years of life is largely made up of milk.

PRESENT LEGISLATION OF THE DISEASE.

The attention of the various governments has been for several years directed to this subject on account of its bearing on the health of mankind. Little has yet been done, owing to the unsettled opinions of recognized medical and veterinary authorities. This, however, no longer exists, and there is a strong sentiment over the civilized world that something must be done to keep the disease in check.

I shall not refer to the different laws in regard to its extermination, but suffice it to say that there are none better than the law passed by our own Legislature last session, and I would urgently advise any and all having suspicious cattle to have them inspected, and the affected ones disposed of according to its provisions, and thereby help rid the country of a disease, of which more people annually die than from any other disease known.

QUESTION: Can you detect the disease by the sound of the lungs?

DR. RUSSELL: Yes, if the cow is far advanced in the disease. But in the early stages it is not so easily distinguished, unless you have had experience. Cough does not indicate the disease. Cattle are more prone to cough than any other animals I know of. In many cases this is due to their being fed with so much dry food.

QUESTION: Are cattle more liable to cough than horses?

DR. RUSSELL: Yes. A horse will never cough unless there is something radically wrong. A cow, being fed on so much dusty hay, usually upon the floor, which is also covered with dust, is a great deal more liable to cough than a horse.

QUESTION: How is one to know whether a cow is attacked?

DR. RUSSELL: Frequently the first symptom you would notice would be continued cough, followed by emaciation and capricious appetite. Frequently there is stiffness in the forward limbs. It is a disease that is so insidious in its commencement that it should be stamped out as quickly as possible.

DR. TOWLE: An understanding of tuberculosis in our domestic animals is of great importance to the average farmer. He should know it when he comes in contact with it, because a surgeon is not always at hand. If I understand its nature, it is identically the same disease that most of us have had more or less experience with, and we have known it as consumption. Now, fellow-farmers, you know pretty well what consumption is, you know pretty well the cause of the disease, and you know pretty well the ultimate result, and you can judge for yourselves whether the flesh or the milk coming from a diseased animal, having consumption, is a healthy article of diet. I think the course that has been recently adopted by our cattle commission is proper, and should be supported by every one of us. Anything that will have a tendency to lessen the vitality of the animal will have a tendency to propagate the disease. It is nurtured in places where the cattle are kept away from pure air, and where they are fed on food that is unhealthy, or where they are fed to excess. If you and I were put upon beefsteak and given an enormous amount of it, how soon we should tire of it, how soon it would become injurious to us. In cities and large towns we find the cows are fed high and kept in close confinement, and consequently we have a right to suspect the transportation of cattle from such places into our neighborhood.

QUESTION: Do you consider consumption in cattle any more contagious than it is in human beings?

DR. TOWLE: I do not know why it should be.

QUESTION: I agree with you that if cattle are kept under improper conditions they are liable to disease just as much as human beings, but the general impression is that this disease is contagious among cattle. Is it so among human beings?

DR. TOWLE: Certainly.

QUESTION: To what extent?

DR. TOWLE: To the extent that, if the bacillus is taken from one person into another, he is inoculated.

QUESTION: I admit that it is hereditary and may be slightly contagious. If it is contagious to the extent that you intimate, why is not something done to prevent its spread in the human family?

DR. TOWLE: Isn't it being done?

A MEMBER: To some extent; but nobody is alarmed about it.

DR. TOWLE: Later views of the highest medical authority maintain that consumption is not hereditary to any great extent, but is highly contagious. I think you will live to see the day when the consumptive member of the family will be carefully, will be entirely, isolated from the rest.

MR. MANN: This discussion calls to my mind certain circumstances which I would like to narrate. Ira Whitcher, a man well known to most of the people of New Hampshire, had three noble boys, robust and hardy. One of them, about twenty years old, went to painting buildings. He worked at that business some two or three years, I think, and he began to cough, a hacking cough. He then left the painting business and went into the Wells River bank, and there shut himself up in a close room. The cough continued, he grew worse, and everyone knew that he had consumption. Everything was done that could be done. He was sent to the hot springs, and he was sent to Colorado; he came home almost dead. Another son, robust and hardy, had been building a new house. It was in December, and he sat up nights until midnight to keep a fire to keep the water from freezing. Then he went home and took care of this sick brother; he lay down in the same room on a lounge. Soon after this the first one passed away, and the other, who had meanwhile been taken sick, died of the same disease six months afterwards; and his young wife, to whom he had been married three or four weeks, died within eight months

after his death. The question has been asked, Is consumption catching? Now I believe that Frank Whitcher took the disease from his brother, and that it is just as catching as the itch. No person should be allowed to sleep in a room newly plastered. His lungs were raw, and it was just as natural for him to take that disease as it was to breathe. And then he slept with the woman and she took it, and the three passed away. They were nephews of mine, own cousins to my boys, and just as rugged as they were; and in that brief time the two boys and the young wife passed away. This discussion brought it afresh to my mind, and I could not keep still. You must excuse me.

DR. TOWLE: I do not want any false ideas to go out from this meeting to alarm anyone unnecessarily. That this disease is transmitted from one to another is a fact which has long been admitted by the medical profession. But that individuals may have contact more or less for years without contracting the disease is also possible. But the disease germ passes from one individual to another individual, and the latter is just as much inoculated as though it was the poison of small-pox. But individuals may live in the same apartment year after year, and the germ never be transmitted from one to the other. So there is no more occasion for alarm hereafter than there has been for the last twenty-five years; but anyone having this disease in his family should always exercise more or less care.

PROF. ROBERTS: I would like to lay a little more emphasis on what has been said. I think there is a little more danger at the present time than there has ever been, because we have put the cow under more artificial conditions. We have mixed them in large numbers, and in doing this we have not always taken proper sanitary measures. The result is that our large dairies, especially in the cities, have become hot-beds of disease. I suppose the doctor had reference to men.

I want to ask this question: Whether, if on the first indication that the disease is in a herd the diseased animals are

killed, the disease cannot be stamped out? Our herd at Cornell University was full of tuberculosis nineteen years ago, and every year for three or four years we killed some of the animals, and the disease disappeared.

I cannot quite agree with the doctor on one point; but, mind you, he is an expert, and I am not; one word from him is worth many from me. I think that any man can quickly detect tuberculosis in the lungs, as easily as I can tell if my child's lungs are not all right when I turn it over on its back and listen between the shoulders. By carefully listening to the breathing of the well cows and the diseased ones, I can very quickly detect whether there is anything wrong with the lung. Then, of course, I always ask the doctor, and in every case he ratifies my judgment.

I am very glad that the doctor has such positive views in regard to its contagious nature. A boy in one of the rooms at the university was pronounced to have consumption not long since, and the physician took as much care to prevent contagion as if it had been small-pox.

DR. RUSSELL: It has not received the attention that it ought in years gone by. If it had been the small-pox or yellow fever, the whole country would have been up in arms. It is of so insidious a nature that it has been allowed to progress unchecked.

PROF. ROBERTS: Are the germs that are transmitted as likely to prove fruitful as are the germs of some other diseases? Does not the system often destroy them?

DR. RUSSELL: Yes. The system in many cases throws them off; that is, not being fit for development, they are destroyed. Of course that is in the case of a strong, carefully and well fed cow.

QUESTION: In your report you state that you found some eighty or more cases in different parts of the State. Do you know whether they were cattle that had been here a long time or cattle that had come from Massachusetts.

SECRETARY BACHELDER: Instead of eighty we have killed one hundred and eleven cattle since the fifteenth of last April,

and eighty-one of that number have been found in Hillsborough county; the others have been scattered through four other counties, and in five counties we have found no cases. In killing these one hundred and eleven cattle we have killed but one well animal. They have mostly been condemned on the opinion of Dr. Russell, who has just spoken to you. We may have overlooked some that were diseased, but we have been sure in one hundred and ten cases. Some of those cases were traced directly to Massachusetts, and many of them we traced to herds that come from Massachusetts,—perhaps the animals themselves did not come from there, but they had been in pastures with cattle that did come from Massachusetts. It is a fact that fifty per cent of the cattle coming from Massachusetts to pasture come to Hillsborough county, where we found seventy per cent of the disease. From those two facts we conclude that much of the disease came from that State.

There is one point that has not been brought out as I would like. It is admitted that tuberculosis in cattle is the same as tubercular consumption in the human race, and that it is equally as contagious. Now, it seems to me that the habits of animals being so different from the habits of people that it is really more contagious, and that it would not be contracted by one person from another so easily as it would by one animal from another.

QUESTION: If these coughing cows are picked out and brought up here once in two or three weeks and scattered among the New Hampshire hills, is n't there great danger of bringing the disease right into our midst? I understand you don't go anywhere unless you are sent for. Now, who knows much about this disease, say, in Sullivan county? Who can detect it?

SECRETARY BACHELDER: Whenever we receive a letter from the selectmen of a town, or from anyone else, for that matter, stating that they suspect a case of tuberculosis, we ask for the symptoms, and if there is anything in them that leads us to think there is tuberculosis we send a veterinary to make an examination. This has been done without exception. I do

not pretend to say that there is no tuberculosis in Sullivan county because we have not found it, but our attention has not been called to any cases in this county. In order that people may not be too much alarmed by the appearance of a slight cough, I think I may safely say that if you go into any barn where there are a dozen cows, and stay an hour, it would be very strange if you did not hear some individual, perfectly healthy, coughing that short cough, the same as you would if you entered an audience of as many men. I do not think the cough alone would be a sufficient cause for any great alarm.

We do not prohibit cattle coming from Massachusetts entirely. About seven thousand cattle come up here annually, to pasture. If they were shut out, pastures would be left without any cattle. We admit cattle on the certificate of a veterinary surgeon that they are not infected with this disease. If there is not enough disease about them so that the veterinary surgeon can detect it, we think it is safe to let them come in.

AFTERNOON SESSION.

THE PRESIDENT: Mr. E. J. Burnham, lecturer of the State Grange, who was to speak at this time, is detained at home by sickness. I now have the pleasure of introducing Prof. I. P. Roberts, of Ithaca, N. Y., director of Cornell Experiment Station, who will address us upon "Conservation of Fertility."

CONSERVATION OF FERTILITY.

BY PROF. I. P. ROBERTS, OF NEW YORK.

Mr. President:

The time has come in agriculture, as in most other industrial occupations, when intelligent economy, business methods, and a broad and full understanding of the laws and forces which govern and control animal and vegetable life must form a partnership with the farmer, if satisfactory results are to be obtained.

Intelligent economy of fertility means, first, that as little waste as possible of plant food shall occur; and, second, that the plant food, which is already in the soil, should be set free, in order that it may be built up into plant and animal tissue.

Business methods in agriculture mean the same as in other pursuits, namely, a careful accounting of expenditures and receipts, in such a manner, and with such details as will show at a glance, not only the expenditures and receipts of the year, but, also, the debits and credits of each branch of the business or each crop produced. An acre of clover may be worth fifteen dollars, while an acre of wheat may be worth twenty; but if it is not known what these crops remove from an acre, nor the value of the plant food left in the soil, by the roots of the respective crops, no intelligent study of the conservation of fertility can be made.

By laws and forces which govern and control plant and animal life, is meant, that each species, and each variety, of plants has a law unto itself; and unless that law which is applicable to each species is applied at the right time and in the right manner, fertility cannot be conserved nor success reached.

If the laws which govern successful wheat culture be applied to the raising of corn, loss must ensue; and yet, most farmers go on fitting wheat ground as for corn, and corn ground as for wheat, and then wonder why the response of the soil is so feeble. It sometimes appears that they fear that the land will be made poor if a large yield is secured.

As fertility and plant food are not in all cases synonyms, it may often be better to use the latter, rather than the former term. Available plant food is really what is wanted; if that be secured, then the question of the conservation of fertility may be profitably discussed.

Plant food, and how to secure it in the most satisfactory way, may be treated under the four heads—1, culture; 2, by the aid of plants; 3, barn-yard manures; 4, commercial fertilizers.

I. — CULTURE.

The farmer should go direct to the soil and demand of it the elements required by the plant. Usually the land contains a large amount of what is wanted, — it is only in sandy and excessively poor land that it becomes impossible to raise good crops by superior culture alone. During the last summer a very poor piece of land, that under ordinary culture produced less than half a crop, and which, under superior culture the past season, gave a large crop of cow peas, was analyzed. In the first nine inches of surface soil there were found 3,094 pounds of phosphoric acid, 3,410 pounds of potash, and 1,876 pounds of nitrogen, per acre. With good culture this soil contained enough available potash and phosphoric acid for a good crop, and the deficiency was only in the one element,—nitrogen. By raising leguminous plants, which are able to get their nitrogen from the air, the deficiency was made good. The farmer cannot analyze the soil, but he can, by planting different kinds of crops, determine very accurately whether there are sufficient amounts of all elements wanted, and if not, what ones are deficient. But these questions are never answered where the cultivation is poor. Then the implements of culture, scientifically used, may be made to reveal the possibilities of the soil more accurately and more cheaply than the chemist.

In each one hundred pounds of soil of good land, may often be found one fourth pound of potash, one eighth pound of phosphoric acid, and one half pound of nitrogen. An acre of land, one foot deep, weighs 1,600 tons. This would give 8,000 pounds of potash, 4,000 pounds of phosphoric acid, and 16,000 pounds of nitrogen, per acre. Of course the real value of these elements cannot be determined, because it is never known how much of them can be made available to the plant; in any case, no matter how good the culture, there must always be a residue in the land which the plant cannot recover. Much of the land in New Hampshire is not poor, although it is producing but meagre returns; what is lacking is real, thorough cultivation, and before manures and ferti-

lizers are discussed we should clearly understand that culture, superior culture, always precedes them. It often happens that superior culture sets free all the food that the plant can use. We have scrub plants as well as scrub animals; both are benefited by improving their food; both lack the power of using large amounts of food, because their ancestors have always been kept on a low diet. After good culture, then, must come the good plant, which is capable of using to good advantage, liberal rations.

2. — BY THE AID OF PLANTS.

Plants not only use elements of the soil, already available, but they also have the power, to a considerable extent, of setting free their own food. If the soil is in the proper mechanical condition, the roots of the plants become very extended. Those roots have the power of exuding a part of their sap, and this, acting upon the particles of earthy matter, liberates plant food. The water which carries this plant food in the earth, has now become richer in these elements than the sap of the plant. Then occurs what is known as osmose or molecular attraction, the sap passing through the membranes of the roots, and the water of the soil passing into the roots, where the elements of growth are taken up by the plant. Thus the plant abstracts the food by exactly the same physical process as sugar is secured from beets, by the diffusion process. More than this, some plants not only act upon the soil, by setting free the mineral matter, but they also have the power, through living organisms attached to their roots, to feed upon the nitrogen of the air. Again, many plants have the habit of sending tap roots long distances into the sub-soil, especially in land that is fairly porous or has been well under-drained. These long feeding roots bring large amounts of plant food from the sub-soil and make it available for the use of the shallow feeding cereals. The roots of a single clover crop left in the land, sometimes contain a hundred pounds of nitrogen per acre, all of which, in time, may become available for the use of succeeding plants. In addition to the

plant food, which the soil furnishes direct, the leguminous plants, when properly used in rotation, will bring, in a single year, to most soils, nearly all of the nitrogen which two or three succeeding crops will require. Then if we can adopt a four years' rotation, and have clover occupy the land nearly two years, although but one, or at most, two crops are cut, both in the same season, there will be an abundance of nitrogen; in fact, all the plant can profitably use, if a large amount of nitrogen has been set free in the soil, by cultivation, and if, as is proposed, all of the refuse nitrogen of the stables is added to the fields. The time has come when, as I believe, it will be necessary to purchase little or no nitrogen, if we give the culture I have recommended, — practice a four years' rotation on the better lands, and save and return to the fields all the farm manures. Of course all of the land is not to be plowed nor treated in this way; more than half of it in your State should be devoted to permanent pastures, and another portion to permanent meadows. These, like the plowed lands, will want to be fed; so it is possible that a portion of the manures, and sometimes the larger portion, will have to be used to maintain the permanent grass lands, and it may be quite possible, in fact it is probable, that in order to secure the most profitable results, some commercial fertilizers will have to be purchased. We will leave that to your good judgment, after the subject of farm manures has been discussed.

3. — FARM MANURES.

Are the manures and refuse of the farm barns worth saving? In order to answer this question intelligently we should know the quantity and quality of manure produced by the animals of the farm. A cow of 1,000 pounds, in full milk, will make upwards of 50 pounds of manure daily, exclusive of bedding. Well fed cows average throughout the six winter months about 60 pounds of manure each, including bedding; then we have, for the six months that the cows are stabled, $5\frac{1}{2}$ tons of manure per cow. Analysis of manure at our station showed that each ton contained 15.6 pounds of

nitrogen, 8 pounds of phosphoric acid, and 17.8 pounds of potash. If this be computed at 15, 7, and 4½ cents per pound, respectively, the value would appear to be \$3.61 per ton. This implies that the manure contains no extraneous water, and that it has been kept from wasting. All who are familiar, and all should be, with the difference of the value of these three elements, due entirely to the solubility or immediate availability, will understand that potash, nitrogen, and phosphoric acid in farm manures, are not worth as much per pound as they are in high grade commercial fertilizers. Just what the difference is, it is impossible to state. In skillful hands, without doubt, these elements are worth half as much per pound when in the form of manures as when they are contained in commercial fertilizers. If we now call a ton of farm manures worth \$1.80, we find the value of the manure produced by a well fed cow for the six winter months, to be, in round numbers, \$10. Although the amount of manure made by a horse of the same weight, is only about two thirds of that of the cow, its value is about the same per 100 pounds of like food consumed; and the same may be said of other animals, that is, the value of the manure they produce, other things being equal, is nearly proportioned to their live weight. If a 1,000 pound animal produces in six months, voidings valued at \$10, then every 100 pounds of live animal will produce, in the six months, manure worth \$1. You will observe how easy it is now to compute, not only the amount, but the value in round numbers of the manure produced by all of the animals of the farm. A farm stocked with 15,000 pounds of cattle, 6,000 pounds of horses, 3,000 pounds of sheep, and 1,000 pounds of swine would, if properly managed, leave for distribution on the farm, \$250 worth of manure annually. Certainly this is a very conservative estimate, and most certainly manure valued at \$250 is not only worth saving, but worth our most careful attention.

How this manure is wasted—First, by being scattered thinly over yards, and by the buildings where the fowls scratch and distribute it, and the hogs root it over, and the feet of the

animals punch it into the muddy soil. It is no uncommon thing to find more than one half of the manure that is left about the horse stable door so scattered or destroyed that it is impossible to recover it. The half that is left is often subjected to intense heat when it is first thrown out, and to serious leaching after the heat has subsided. Nearly all of the manure produced by hogs is wasted bodily, only a small fraction being gathered up at irregular times. The manure from the cow stable is seldom more than a part of the solids; these are often thrown out of the stable window and leached until the ten dollars' worth of manure, per cow, has been reduced by open floors, carelessness, and exposure to the elements, to less than one third of its original value.

In an experiment conducted at the Cornell University Experiment Station, in 1891, the gross weight of the horse manure, exposed from April to September, to the influence of the weather, lost in weight, 57 per cent; in nitrogen, 60 per cent; in phosphoric acid, 47 per cent; in potash, 76 per cent. The value per ton, at the beginning of the exposure, was \$2.80; at the end, \$1.06; showing a loss of 62 per cent, and that, too, of the most soluble, and hence most valuable, part of the manure. This pile of manure contained 3,319 pounds of excrements and 681 pounds of cut straw bedding. Considering now the character of the manure and the ascertained loss, and granting that this loss was the most soluble and most valuable part of the manure, as has been stated before, it is probable that the two tons of manure in the experiment were worth not more than a quarter as much in September, when the experiment ended, as in April, when it began. Then, too, it must be remembered that this manure was not exposed during that part of the year in which the largest amount of loss is likely to occur, because the larger part of the rain fall occurs between September 22, when the experiment ended, and April 25, when it began. Now in addition to the losses which I have indicated already, which occurred simply from exposure to manure piled about two feet deep, with no animals poaching it into the mud, nor fowls nor hogs distribut-

ing it over a large surface, imagine two tons of manure lying at the stable door, exposed to every kind of loss during the greater part of winter, and a portion or all of the summer, and I think you will agree with me that it would be no uncommon thing for these two tons of manure, valued at \$2.80 per ton, to be so reduced as to be worth not more than fifty cents per ton. Then, too, it is no uncommon thing to have to draw out with this manure 33 per cent more water than it contained when it left the stable. Experiments with cow manure, showed a loss in one case of 30 per cent; horse manure kept in a loose pile, lost 42 per cent; while mixed manure, thoroughly compacted, and under the most favorable circumstances, lost 9 per cent. It is needless to pursue the subject further; wherever manures are thrown out under the eaves of the barn, or scattered thinly over the yards, or subjected to intense heat or leaching, the chances are that more than half, often three fourths, of the real value of the manure is lost.

HINTS AS TO PRESERVATION.

The methods adopted will naturally conform to the conditions and surroundings; the manure crop should be looked after as carefully as the hay crop; as much skill should be shown in preserving it from loss as is practiced in caring for the wheat; at certain times and under favorable conditions it may be drawn immediately from the stable to the field, but there are over six months of the year when there is no suitable place for spreading manure; there are many times during the winter when it is neither convenient nor safe to carry the manure directly from the stable to the field, so some sort of a receptacle should always be provided for its temporary storage. It is well to mix the manures from the various animals; the horse manure is too dry for best conditions, while the cow manure is too moist; where bedding or straw is scarce, the horse manure may be used for partial bedding for the cows, and for an absorbent behind them in the gutters. Dry earth, or better, gypsum, should be spread upon all stable floors, for the purpose of keeping the air as pure as possible, and also

for preserving the ammonia, and in cow manure for absorbing a part of the liquids. In planning the work and management of a farm, some reference should always be had to the value of the manure of the animals, the number of the animals, and the kind of food that is fed.

If the nitrogen, potash, and phosphoric acid contained in the manure be computed at ordinary commercial prices, it will be found that their value is usually more than half the cost of the food fed to the animals which produce the manure. If the ration of the animal be wide, the value of the manure will be less than if the ration be narrow; the narrow rations are likely to give best results in warm stables, while wide ones are better adapted to animals in cold quarters. It will be seen then, that warm, comfortable stables add indirectly to the value of the manure pile. I have said that some provision should be made for storing manures, till a suitable place and suitable time is secured for distributing them upon the fields. Where there is plenty of straw the best method of preserving them is in a covered yard, where the animals can tramp the manure, at the same time leaving a portion of their dropping in the covered yard instead of in the stable. The tramping, to some extent, fines the manure and entirely prevents fire fanging. Under certain conditions it would be better to drop the manure into the basement directly under the animals; and again it might be advisable to build a narrow lean-to, four to six feet wide, and three or four feet below the level of the cow-stable door and the entire length of the stable, where the daily accumulations could be deposited and sheltered from the weather. In fact the appliances for storing manure should be as varied as are the conditions under which the manure is produced.

Having valuable manure, well preserved, we naturally ask where and how it should be applied. Whenever it is possible, manure should be applied on the surface in the fall, where there are plants growing. The coarse and unrooted manures may be distributed to good advantage, say five tons per acre, during early winter, upon the prospective corn

ground. The pastures will be greatly benefited also, if they receive a coat of well spread coarse manure in early winter. The wheat ground and the meadows should receive their food in September, if possible, and it will be well if this manure be well rotted and placed as near as possible to the roots of the plants. If the manures have been properly handled and housed, and fined for a few months before they are applied, their action will be much better and more potent in starting young plants than raw manures, especially if applied on poor land.

Finally, if a reasonable number of animals are kept on each hundred acres of land; and if they be fed in that manner which will bring the largest net results; and if all the voidings, both solid and liquid, be preserved and judiciously applied to the land, the added fertility will, in most cases, be sufficient to secure maximum crops, provided the best use has been made of the fertility which the soil naturally contains, and that which food-gathering plants have secured. In some cases the land has been so depleted of its fertility, or so badly managed, that this sort of treatment will not produce the largest paying yield. Then, too, at first a farmer may not be skillful and some mistakes of necessity will be made, and in many cases conditions will not permit entering upon this new method of farming immediately, so I may say there will always be a place, and a large place, for commercial fertilizers. Having used, to the best of our ability, the plant food in the soil, the plant and the farm manures, it is then a matter for each individual farmer to determine whether he may use with profit commercial fertilizers.

I want to say a word in regard to the management of cows.

Now what we want to do with cows and other animals, is to make them vary. What is the origin of your dairy cows? If I go back a few hundred years I find a wild animal roaming the woods of Europe and of the island of Great Britain, giving two or three quarts of milk per day, nursing its calf a few months, and then drying up. How did she improve to her present condition? You say it is climate. But the climate

was not changed. She grew right up in the same climate. You say, thoroughbreds. They had no thoroughbred stock. You say, then, breed. There was no breed. Blakewell started with scrawny, almost woolly sheep, and in five generations—I believe there was no other factor in that problem but feed alone, I cannot see where any other came in—by improved food and abundant food alone, he astonished the world, and sheep were let during a single season for fabulous prices. Charles and Robert Collin went down and visited Mr. Blakewell. What did they learn? A secret? Not one. Mr. Blakewell never put pen to paper; he never revealed a secret, if he had one. After they visited him they went home and picked up common cattle through the country. There were no thoroughbreds; there never were any thoroughbreds that I ever knew of; they are only high grades, all I know of, anyhow; but we have called them thoroughbreds ever since. Within a few years they produced a grade ox that was sold for a fabulous price. Then came the white heifer, and they put her in a wagon and took her all over Great Britain, and earned over ten thousand dollars, I think it was, with that heifer. Was that done by blood? Was it done by climate? Not a bit; it was done with food.

Now, I want to go back to what was said last night by the lady, the stress she laid on the effect of food as a great temperance factor. It is one of the greatest in the world. You have got to use that same factor if you conduct a dairy successfully. The volatile oils in the food we eat play a very important part in digestion. Throw down some hay in the field and let it lay there two or three days exposed to the wind, and put it before a cow, and also put before her some that has just been uncovered in the mow, and see which she will take. Cut a whole lot of hay up for the horses, for food next summer,—cut it all up now, pile it up somewhere, and let the wind blow in the barn, and let it get old, and try that, and what will Dobbin say to it as compared with fresh hay? He will tell you that the aroma has departed, that he don't want it; the spirit has departed. Take an apple, cut it and dry it,

and let the appetite compare it with the apple just unheaded, out of the cellar. The dried apple has lost nothing, that the chemist can detect, but water; therefore, eat the dried apple and drink water. How do you like it as compared with the apple full of aroma? I use this peculiar illustration that you may remember that whenever you put anything before a cow, if you want her to do her best, you must not only put it there in the right quantity, and at the right time, but you must put it there in such form that it may tempt her appetite. It has been, and is, a great problem to lift the cow up, each generation a little more, until finally she shall reach the limit of the law of the dairy. I suppose we ought to think it is reached at about 1,100 pounds; indeed, it would seem as though we had about reached the limit.

Now I shall be glad to answer any questions anyone may desire to put.

QUESTION: Is your corn ground manured on plowed furrow, or on grass that is to be plowed?

PROF. ROBERTS: This year we plowed in the fall. Our land is a little heavy. We leave it just as rough as we can, because if we turn it down flat it will get hard. We want to get it up so it will freeze a little, and so the sun can get in early in the spring. We spread manure very lightly. I think most of us make a mistake in putting manure on too thick. I think, ordinarily, I should never put on more than five tons to the acre.

QUESTION: How much would that be of ordinary barnyard manure?

PROF. ROBERTS: A good fair load usually weighs about a ton, if it is not full of water and there has been a fair amount of absorbents. I should very much prefer to put on five tons to the acre, and go over very nearly all the farm, or at least, half the farm every year. Of course we keep a great many animals. It is surprising how many we keep on a little farm. I would not plow the manure under; I should want to keep it near the top. We feed a cow twice a day, and land very

often once in ten years. That is too long; it gets hungry between breakfast and supper.

QUESTION: How long should the land be mown before it is replowed?

PROF. ROBERTS: That depends on circumstances. I am very much in favor of rapid rotation, on account of the destruction of insects, and on account of setting free the plant food by the plow. Our practice is four years' rotation. Clover cut twice, or cut once and pasture; manure on the surface, plow, put into corn, followed with oats or barley, replowed, manured, followed with wheat; so the clover is on the ground nearly two years, and yet it does not occupy but one season. I sow two quarts of timothy seed on each acre. That is an insurance policy. It will grow if the clover does not set to suit me. If the clover sets well I shall not see anything of the timothy; the clover will drown it out.

DR. TOWLE: Can we raise corn profitably right along?

PROF. ROBERTS: I don't think you can as profitably. Corn is able to set free a certain kind of plant food adapted to itself. On land where neither corn nor wheat will prosper, the mullen is able to set free a plant food adapted to itself, and the worn out soil will produce a large crop of seeds. Some plants are able to feed on tough nitrogen, and others only on tender nitrogen. The wheat plant must have its food tender; the mullen can have its food tough. You cannot eat tough beef that a dog would thrive on well. He is able to digest nitrogen in a tough form; we must have it tender. After the Southern planter has exhausted the soil, if he lets the land lie idle for ten years it will be clothed with the most magnificent growth of trees you ever laid your eyes on,—trees as large as my arm, and as high as this ceiling, and the corn still growing in that forest. What does that mean? Why, that the pine is able to set free from that exhausted soil a plant food, while the corn plant and the cotton plant could not do anything with it.

PRESIDENT HUMPHREY: What do you think about hauling out manure in the fall and winter? I see there is a great deal of that done in this State.

PROF. ROBERTS: When you have got it on your fork why put it into a pile? Let us see what happens. It is largely soluble and easily washed away. A rain of two or three days will wash the nitrogen and a good deal of the potash down into the ground, right in a hole. When you spread it you cannot get back those fertilizers unless you take the soil underneath. The manure should be spread immediately off from the wagon, as evenly as it can be; and then it might be well enough in the spring to take a brush harrow and run over it, so that each particle of manure will be changed onto new ground, so that the spring rains will again wash it. There are some who keep thoroughbred animals and bed pretty heavily. They draw the manure directly to the meadows and spread it, and some dry day in March or April take a horse rake and rake it all up, and draw it back and run it through the stables again. Manure that is spread on the ground in October or November is, three fourths of it, gone by spring if the winter is an ordinarily open one like this; the spirit is gone; it has been washed out.

MR. BACHELDER: Would you advise spreading manure on the surface any other time except late in the fall?

PROF. ROBERTS: I would seldom spread manure after February; the wheels cut up the soil, —this is true in our climate; it would be a little later here. I would keep the manure stored up; I would look after it and see that it does not waste; I would hold it just as I would hold wheat in the granaries, to use as I wanted it.

QUESTION: Have you ever used manure spreaders?

PROF. ROBERTS: Yes. We have discarded them. The larger part of the manure is spread in the winter, and they will not work on snow; they are expensive; they get out of order quickly. I can conceive conditions and circumstances where a manure spreader would be an admirable implement.

Adjourned to 7 o'clock.

EVENING SESSION.

A large audience assembled for the evening session, and were favored at the opening with music by the choir.

THE PRESIDENT: It affords me great pleasure to introduce, as the speaker of the evening, Ex-Gov. W. D. Hoard, of Wisconsin, who will speak upon "The Dairy Interest." Governor Hoard is not a stranger to a New Hampshire audience, and I am sure you will be interested in what he has to say upon this important subject.

THE DAIRY INTEREST.

BY EX-GOV. W. D. HOARD, OF WISCONSIN.

Mr. President, Ladies and Gentlemen:

I trust that you will be as indulgent with me as I would like to be with myself, and that would certainly satisfy me to the top of my bent. We are all more or less pervaded with a certain degree of self-indulgence, and if we could get the public to be as kindly to us as we would like to be to ourselves, what more could we ask. I am not feeling to-night as though I had the right sort of a grip on this question; but as the old German said about his wife, "And she be not so very handsome nor so very smart, but she be the best I have got," so I would say concerning this work and do the best I can with it.

I am to talk to you to-night along some of the lines of a dairyman's experience with the truth. Paul says, "The truth shall make you free." The whole question of thought and study in a dairyman's life is to determine the size and location of the truth. All truth is correlated, and, as a consequence, every truth that affects us in the dairy business, that brings either reward or punishment, is of interest to us.

A great many men are full of apprehension concerning the future of the dairy interest; and I presume I have been accosted a hundred or more times with this query, "Don't you think you will overdo the dairy business by and by? You are encouraging all the farmers to go into this branch of agri-

culture, and by and by will it not be completely overdone, as every other business is?" Fortunately for the stability of the business it is all based upon a cow, and if every man in the United States should resolve to-morrow morning to go into the dairy business it would not add one cow to the lot, and it takes two years to make a cow, and then, half of them are not cows; and so, there is an average share, don't you see, of discouragement. It is astonishing how slowly this wonderful mother called the cow, increases in the United States. The increase in my own State I am most conversant with, and it is only five and a half per cent yearly, — that is all. Consider, also, that the population is increasing to-day in the United States in a very much larger proportion than the cows; and it is becoming a tremendous problem for you gentlemen who are dealing with it — it is becoming a tremendous problem how and what to feed this sixty-five million of people. And there is another tremendous problem stepping in, and that is adulteration, which is taking away a large portion of your market. It is estimated that to-day nearly twenty-five per cent of the food product of the country is more or less deteriorated by adulteration. If the farmers could get that twenty-five per cent what a difference it would make in their condition. The farmer is the food manufacturer and producer of the nation; and, consequently, every other interest depends upon them for daily bread, the wherewithal it shall be fed. The question of the adulteration of dairy products and its growth is wonderfully wide and deep in all its minute relations. I am glad that I am standing in a State to-day that has so much of the old-fashioned, deep rooted, Puritan hostility to adulteration. It is a doctrine you received from your fathers, and I thank God it has not become corrupt in its flow from the source; and when you said that fraudulent butter should bear a pink hue, so that it may brightly show to the world that it is a fraud, you did wisely, only it was a bad joke on the cow, because pink is a lovely color.

My talk to-night will be addressed very closely to the men who produce the milk, and I shall give some illustrations

from these charts concerning the cow—the animal that produces the milk—and man's relation to her. This is a part of a lecture which I gave at Concord last winter, and many of you gentlemen heard me; but I could not, in the short space allotted to me, dwell upon certain features of it as much as I desired. The whole lecture is divided into three parts—first, breeding, the production of the right sort of animal; second, feeding, and that is one of the profoundest problems in the business; and third, handling, which is one of the most important. Now, I wish to dwell a little while to-night upon the subject of handling dairy cattle. Let me open the subject by saying that this animal, seen at either end of the chart, represents the dairy type of cattle; the one in the centre represents the beef type. You have here the two results of the workings of temperament through the mysterious laws of procreation and the skill of man, who has taken hold of these laws and wrought out for himself dominion, as God gave it unto him, over the beasts of the field.

The question of handling cattle is very imperfectly understood, and very imperfectly practiced by the average farmer. I will illustrate this fact by narrating a little incident which fell under my personal observation the other day, in New Jersey. I was to speak at a farmers' institute, near Orange county, New York, where the farmers are devoted to the production of milk for the New York market. I took the cars at Newark and passed through Patterson, then up over the mountain and on to the plain, one of the most fertile sections in New Jersey. It was a cold day, that is, a day full of destruction to the dairymen—a day that was cold, and rainy, and raw, and disagreeable, and heat naturally and quickly evaporated from the body of either man or animal. I had my face to the window; I had no other opportunity to study the intelligence of the men I was going to talk to, except from the car window. I had my face there steadily as I rode for miles and miles during the forenoon. The secretary of the State Agricultural Society was with me, and we conversed a great deal upon what we saw. In passing over that territory I

scarcely passed a dairy farm from nine o'clock in the morning until four in the afternoon, where the cows were not turned out and were ranging the fields; and those farmers were making milk for the sake of money; those farmers were conducting their business, as they supposed, from the standpoint of the best practice; they were paying \$30 a ton for cotton-seed meal, \$28 for linseed meal or oil meal, \$23 for bran, \$26 for corn meal, \$15 for hay, and with all this costly feed they were trying to warm all out doors. It is a most expensive operation. When I met with the gentlemen in the evening, as I am with you to-night, a crowded house, I said, "Come, now, let us reason together. Your practices here are not based upon physiology. I doubt much if scarcely a man in this community has ever thought of the value of studying a cow from the standpoint of a cow's physiology. Now, what are some of these laws which govern the production of milk? The first and essential requisite in the production of milk is the establishment of warmth. Invariably heat influences the process of lactation; it is a principle of maternity; it is a principle that governs the action of maternity through all the lines of motherhood, from mankind down to the lowest animal. Yet we see men strangely oblivious of this fact. Why do they do as they do? Because so many farmers in this country have inherited their knowledge of farming,—and they do it the same as the Smith boys in Arkansas got married, they always married girls by the name of Jones, because the Smiths had married Joneses for a great many generations. It was an excellent thing for the Jones family, and for any stray girl there might be in that family, to be thus provided for by the hereditary practice of the Smiths, but it was not a very intelligent selection." The point right here is this, men seem to forget to study this animal from the standpoint, as I said, of physiology. This action of maternity is governed very wonderfully by the action of heat — by warmth.

In my home creamery in Wisconsin—my son and myself handle four creameries and three cheese factories—but in my home creamery, which is my experimental station, and where

I keep a vast number of records for determining facts, I have a weather record; and every morning nearly a hundred farmers bring their milk, and an accurate record is taken each day of the state of the temperature and the character of the weather. The creamery has been running since 1887, and when I first began with these records I used to astonish a great many farmers by saying to them, "Your cows were out in the fields yesterday, in that cold rain storm." And they said to me, "How do you know? Were you along by the place?" "No." "Well, how do you know where they were?" "Come here and look at your milk account, and see how much less milk you have brought to this creamery this morning than you usually do." Then the oil test would be taken, and I would say, "You have lost so much of the butter fat out of the milk." One old German said to me one day, "You know all that; you sit right here; you know all that business, what is on my farm two mile away?" "Yes." "I don't know whether I better bring milk to such kind of man or not." This question of housing is very imperfectly studied and imperfectly understood by farmers. Take, for instance, in June a cold northerly wind will sweep down over your State as over ours. It has come so now that the patrons of that creamery will start at once, a large portion of them, the most intelligent ones, and house their cows. Why, they cannot afford to lose that butter; they cannot afford to lose that milk. And as the cold weather comes in the fall, the cows are put up and housed nights sometimes a month earlier than they were when we first commenced to teach the lessons of intelligence from this weather record. Now, these are hard facts, facts which are undeniable, which act just the same in New Hampshire as they do in Wisconsin.

This law of maternity, this idea of exposure, lies in this way, the cow has a butter fat in her milk of four per cent, say—that is, there are four pounds of butter fat in every hundred pounds of her milk. That is the ordinary natural adjustment of the solid. Now here comes a cold storm, and it becomes instantly necessary, for her protection, that this

carbon—for butter fat is almost pure carbon—that this carbon be consumed in her body, for her own protection, and she proceeds at once to consume it; and she does so because you have not made any provision to save it. She must maintain her bodily health; the instinct of her body is just as powerful towards self-preservation as yours. You drink when you want to and eat this that and the other thing, according to the internal promptings of nature, and you scarcely know why. She must preserve the heat of her body, and she takes it out of your twenty-five cent butter, and if you can afford it she can also. A cow is a good deal as Voltaire once said of certain women, “If you want them to love you, you must fill them up with a love for themselves, and what runs over belongs to you.” It is very truly so; and it is a most excellent provision of nature, and I do not blame either woman or cow. This idea of handling a cow intelligently along the line of preservation from inclemency is a modern idea, though it has been known very largely for years. I heard Mr. Gould say last night, that intelligent handling of cattle dated since 1853, in Ohio; that in his county, up to 1853, he did not believe there was scarcely a single cow that was housed in the winter. So you see how modern is the thought and study along this line.

Another specific necessity in the handling of cattle, is the promotion of comfort. It is just about the same in Wisconsin that it is here. We are obliged there to consider, at least, a hundred and eighty days, and from that to two hundred and twenty-five of winter handling of our cattle. It is the same here; consequently these thoughts are pertinent to your experience as well as to mine. Now, we have, just think of it, we have a variety of barbarous methods which are bad, even from the standpoint of our own profit. For instance, our method of tying a cow—putting her in stanchions. Mr. Gould made an excellent remark last night, which I will quote to you. He said, “It is really a derivation from the old Puritan idea of stocks; that one of his ancestors was put in the stocks here in Boston, way back in those old days of severity,

for giving aid and comfort to a quaker, Thomas Gould, and that the Goulds have been opposed to this miserable stanchion business ever since." It did me good to hear him animadvert on that question. I have made practical experiments along this line, and I have been searching for years for some system of tying my cows that should really justify the humanity that I felt in my bosom, concerning them. I have a number of very sensitive Guernsey cows; they are thoroughbreds, and a thoroughbred animal is like a thoroughbred man or a thoroughbred woman, not to be measured by the dullest and most stupid ideas, but by the brightest. Consequently those cows answered very clearly to me every proposition I put to them for their further comfort. I would write over the stable of every cow, if I wanted to write what would do the most good, the word "COMFORT," and would spell it with great big letters; and the cow would gratefully return to me a larger profit. I want to make my talk to-night just as practical as I can. I have not come here a thousand miles to waste my time over generalities. I have been searching for years for a system of tying my cattle, one, as I said, that would justify my humanity and my sense of profit, and I have found it within the past four years. Each cow has a space of three feet and a half; if she were a very large cow, which I never have, she would require, may be, a little more; two feet and a half from the floor, against this partition, a 2 by 8 scantling is nailed right against the wall, like that, flat, fastened right there. From the bottom of that scantling, which sets flat like that, a rack is run up in this way, flaring towards the cow in this shape. This rack contains the coarse fodder and hay, etc., that may be fed her. That is part of its purpose; but the specific purpose is to force the cow, when she stands up, to step back a certain distance. Then the cow is brought up even with this rack; and when she stands with her head even with the rack, just in front of her hind feet a 2 by 3 scantling is nailed to the floor. The result is, she is tied with a halter which she wears continually, a little ring under the throat, a bronco

halter or rope, with two snaps in each one, so if one unfastens the other holds, is snapped into this ring. The result is, when the cow comes into the stable she stands up, her hind feet back of the scantling, on the floor. Cows vary from twelve to eighteen inches in their length; but in the old rigid stanchion establishment every cow had to come to the same length; here was the rigid stanchion across, and here was the rigid upright, and the cow does the best she can between them. Now, the cow stands with her feet back of this little scantling nailed to the floor, and this space is filled with bedding which will last her two months; it will last until it is all ground up, trodden to powder; and the cow is just as clean. I will guarantee to show you a line of Guernsey cows as clean in March as they ever were in June; not a trace on their white sides of stain, or dirt, or filth of any kind; and don't you think the cow appreciates being clean? The people who buy your butter do. On the side of the stall, in front of her, is the ensilage box and feed box for her corn. She will pull a little hay down in front of her and eat it up.

There is a wonderful economy in kindness, a wonderful economy in the comfort of that cow; and then there is a wonderful safety in regard to the cow in another particular. A little scantling stands between the cows to part them. Where cows are stanchioned together you are having constant trouble with stoppages in the milk ducts; little lumps are forming in these milk ducts, and you don't know what is the matter. I can tell you. In nine cases out of ten it is because the cow standing beside the cow that is lying down steps over and treads upon the milk ducts and injures them, and you don't know anything about it. I have been called upon by hundreds of farmers in my neighborhood, asking me to examine this cow and that one, and I have discovered that they have been trod upon and injured. They did not tie the cow for her comfort, but for their own convenience. It is a great deal more convenient to have a cow in a stiff stanchion, for if she kicks you can pound her and she cannot get away; and you can do all manner of things that a great, stout,

masculine man can do in dealing with a gentle little mother. Christ said, "Blessed are the peacemakers, for they shall inherit the kingdom," and he might have added, and they shall inherit lots of butter and milk. "Blessed are the peacemakers." Old Ward C. White, of Wisconsin, one of the most charming and beautiful old men I ever knew, a large farmer, a large hearted man, a man of energy, of beauty of intellect as well as soul, uttered this aphorism, which has gone all over the world where men love domestic animals: "I always speak to a cow as I would to a lady." What did Ward White mean by that? He meant that the innate respect he had for maternity made him respectful to its expression wherever he found it. Many men reverse this saying, and speak to a lady as they would to a cow, or in some way show a lack of respect and appreciation for these more delicate things. Gentlemen, I want to say to you that I have to-day, on my records, sixty women who are dairy women, managing dairy farms; some of them most noted in the United States, as breeders of dairy cattle, like Mrs. E. M. Jones, of Brockville, Canada, who is one of the finest breeders of Jerseys in America; and I have yet to find a single failure among them. It is remarkable what success women have in handling dairy cattle. Why? Because a woman's instinct is at once aroused; she seems to know what to do. A writer of Holland says, concerning the wonderful cattle of Holland, that they are managed by the women of Holland; it is one mother caring for another. If we could only project a little femininity into this great, coarse masculinity that handles cattle, we should have lots better luck.

Some of these points are so essentially necessary that I am compelled sometimes to talk too long upon them. Now, speaking of the necessity of heat, and the effect of it, my wife, a mother, has taught me more concerning this question than any authorities there are on earth. I have ransacked Europe for literature upon it; for thirty years I have been studying this question from the standpoint of intelligent physiology. I was riding with my wife about twenty-five

years ago when our youngest boy was a baby, and she took a sudden chill, and she dropped this remark, "am so sorry that I have this chill." "Why?" I asked. "Because it means so much less for the baby." And then I questioned her about it. I said, "What will you do to restore this suspended function?" She says, "I will try to re-establish the warmth, and will take warm drinks." "Will you?" said I; and I followed her out, and commenced to study an experiment with this other mother. And I brought out about twenty-four years ago the idea of warm water for milch cattle, and I thought I had made a grand discovery, but I found there was not an old woman on earth that did not know all about it. How wonderfully does human experience tie these things together.

Now, I want to speak to you a moment concerning some points about these cattle. Here you have the Holstein mother; here the Guernsey. You see how nearly they accord in all their principal points.

Here you have the opposite temperament, the beef animal, the broad, bulky, thick type of beef cow. Now this animal is a miser; all she does is to store up in her body flesh, and never give it up until she is laid on the block. This animal is a benefactor; she takes large quantities of food and every day gives off that which she makes in her own body, the finest form of food known. You see this animal has no maternity about her; she is a bullock of the feminine gender, and that is all.

I want to call your attention to some points of contour. I can speak to-night of but few of them, but I wish to call your attention to the form of the backbone and the spinal column as one of the most profitable things you can study in a cow. The action of maternity is largely affected by the nervous machinery, the nervous system. Take a cow in full flow of milk, giving you when she is milked twelve to fourteen quarts of milk; twenty minutes before you milk that cow, kill her, if you please; dissect her, and you will find only about two quarts of milk. It is a great mystery. Re-

peated experiment has been made along these lines, which show that there is some action of the nervous machinery which almost instantaneously deposits this secretion in the process of milking.

The spine is the great channel of communication; the spinal marrow is the brain. A man does not think with his head alone; he thinks with the whole brain, and the spinal cord is a part of it. The mammary functions are closely allied to the brain, and the machinery of the one is important in the working of the machinery of the other.

If you want to make a special study of the cow, select from your herd those which show the largest power as milk and butter producers, and see if you do not discover, as a rule, that their spinal processes are large, strong, and prominent. I first brought this theory out about fifteen years ago, and it was induced by the study of over three thousand different examples. Professor Robertson, of Canada, said to me, "I never could see any force or significance in your statement until I went to large agricultural colleges where they have skeletons of the largest cows that existed on the continent, and I saw at once that every cow had a very large and disproportionate development of the spinal marrow and that the backbone was strong and rugged." This is true, because here is a large draft made in the exercise of the mammary functions. That is one reason why it is all sheer nonsense, this talk of turning cows out in the storm to exercise. When a cow makes a pound of butter a day she makes a corresponding amount of proteine albuminoids in the form of caseine for which she has drawn upon her nervous system and upon the whole machinery of the body, more than a horse that is pulling a plow ten hours in twenty-four; and yet many men cannot see in this the deductions of science. I speak to you in regard to this wonderfully complex machinery united with the brain. Let me give you an illustration drawn from milk fever. It is known among humans as parturient fever; it is known in bovines as milk fever. Both are exactly alike in the bovine and in the human mother. What is this machin-

ery that is affected to run the mammary glands? Here is a wonderful network of nerves called the sympathetic plexus; it is a marvelous network of nerves, enveloping the gland with a character that has caused scientists in all ages, physicians, and medical experts to wonder at its form and construction. This network or sympathetic plexus proceeds from the mammary gland, from there to the spinal column here, entering at the lumbar region. Now, what is the effect of milk fever? The moment the dread disease strikes this mother, instantly the nerves telegraph, "Stop secretion." The inflammation proceeds along these lines until it strikes the spinal marrow, and then paralysis ensues, and the cow drops to the ground at once; the disease keeps passing along and the spinal marrow is still more involved, until finally the brain is affected, and the poor animal swings her head one side and dies, the victim of her own maternity.

A beautiful Guernsey cow I owned when I was in the executive chair, a lovely animal, one that I had as much affection for as I ever had for any one in my herd, somehow or other she was more than bovine, seemed lots of times as though she were human. I would sit down in the lot and she would come and place herself in front of me in position to be milked; I would turn back and face the other way, and she would come around in front of me. Many a visitor to my farm has often expressed wonder at the intelligence of these animals. My son telegraphed me, "Bonny Bell has a beautiful heifer calf." I was filled with apprehension. I dropped the State of Wisconsin at once, and said I thought the State could run itself, and I went home. I had always watched these things very carefully for it always meant a good deal to me; there was a cow worth five hundred dollars. I went home and saw my son. "Where is Bonny Bell?" "She is in the pasture," and my heart went down in a moment. I said to him, "You know I have never allowed any such thing as this. You say she is in the pasture?" "Yes." I went down where she was, and I said, "She is gone, my son; she is a gone animal." "O father," he says, "you

are so full of all sorts of finical notions." But the conviction came over me like a flash, and I said, "Pick up the calf, and step off twenty feet and see." He did so, and the mother struggled to her feet, and commenced to turn around in all directions, unable to see her baby. Milk fever first commences by shortening the range of vision; it is one of the first indications of it. If you remove the calf twenty or thirty feet from the mother and she cannot see it you may be sure this dread disease has commenced its work. We took her to the barn and worked on her all day and all night, but were unable to save her. I have seen other cases of such beautiful cows go by the board, but I had never lost one before, and I should not have lost this one if I had been there. I have never cured a case yet and I never expect to, but I have been able to prevent hundreds of them on seeing the first indications of it in the action of the mother.

See the difference between the backbones of these animals. See the straight line of the back of this one which so many men prefer. They are corrupted with the old short-horned idea of the beef animal; you don't see it in the dairy cow *per se*. See how this high pelvic arch rises here. Here are two separate breeds, this one the Guernsey and the other the Durham and still the dairy type holds steadily and fashions according to its own necessities. If the farmers of this country with the dairy farmers, had been as intelligent as the trotting-horse men are you would have seen as wonderful progress made with dairy cattle as you have with trotting-horses. You cannot get a trotting-horse man to buy a horse with a shoulder that is vertical; every intelligent farmer, if he knows anything about a horse, knows that a trotting-horse's shoulder must slope back, in order to let the forward feet out. Nature forms every animal according to its function. That animal in the centre has a beef function; she is formed so as to lay on the largest amount of flesh. This animal is a dairy cow. A trotting-horse is for speed. Look at a greyhound, how is he built? Built invariably for the quickest action and the longest leap. Every animal is built with a clear idea to

the operation of its functions. I love to speak of the trotting-horse, because I am a lover of trotting-horses as I am a lover of all domestic animals. Turn to any trotting-horse on earth and you will see that the spine runs very high just forward of the hips, while in the draft-horse it runs low. In the trotting-horse it rises high in order that the hind legs may have a strong sweep forward. What will men do with trotting-horses? They will check them up high. What is the effect? To bend down the backbone. What is the effect of that? To force the hind legs back; if the horse gets them forward he does it by a very extreme effort. Yet men are stupid enough to check a horse high, and force the backbone down, and force the horse into a wrong mechanical action; and men are foolish enough also to select a beef animal for a dairy cow. I have been a breeder of fox hounds and hunting-dogs. In my country we do considerable hunting. I often take my setter and pointer and go out upon the plains of Wisconsin, Iowa, Dakota, and the Black Hills region. When I have seen these beautiful animals show their wonderful skill, I have often thought what a fortunate thing it has been for me that back of me there have been the finest of brains at work in producing this wonderful dog. Now, a pointer or setter is bred to distinguish the scent of birds. See how wonderfully is heredity at work here. The setter dog will pass over a thousand fox tracks and never know it. His heredity comes down a line of one hundred and eighty years, and it has all been in the distinguishing the scent of birds. He will pass a thousand fox tracks and not know it; but the moment he strikes a bird's track, instantly he is arrested, his muscles become rigid, one fore paw is lifted in the air; he is as stiff as a poker from end to end. What is that? It is the answer to heredity. The fox hound passes over a thousand bird tracks and never knows it. He is born to discern the scent of the four-footed animal. The moment he strikes a fox track he holds up his head and bays out, "I have found it; I have found it; I have found it." "Found what, Mr. Hound?" "That which I was bred to find, a fox track." There

is not a boy in New England that is foolish enough to go out and hunt foxes with bird dogs, nor hunt birds with hounds, or hunt either with a bull dog; but may be you can find his daddy hunting for butter with a beef animal. The fact is, that men in dealing with these domestic animals have not been students.

An Irishman, when passing through a wood, found a man sinking in the quicksand. He ran over to where there was a Yankee chopping near by, and he says, "For the love of God, come here; come here as quick as you can; here is a man sunk in the morass." "How is he sunk?" says the Yankee. "Sunk in the morass, sir, so he is, sir." "How far is he in?" "Well, sir, he is up to his ankles." "O, well, he will get out." "No, sir, for I forgot to tell you that he has gone in the other end first." Now, there are many men who sink their heads and then undertake to do business with their heels. This sinking of the head, thought, and intelligence will never do. Why, bless you, my friends, it takes a man with a brighter brain and keener intellect to be a farmer than it does to be a politician, a million times more. I have dealt with both of them and I know. I know what will make a politician give milk. Just hold up the empty bauble of office to him and he will give down at once. When it comes to the study of these mysterious matters I can load all the politicians on God's green earth, on one side of the scales and the cow would send them kicking towards heaven on the other. We are dealing with wonderful forces; we are dealing with the mysteries of life. All the talent of Europe and America, all the medical skill and study of these great continents has been trying to fathom the mystery of the human mother; and a millionth part has not been found out yet. We have been slowly and painfully establishing data along the lines of these wonderful functions, and the mystery is as great in the case of one mother as in the case of the other. What do we know? But very little. What we do not know is a volume; what we do, is a page.

The farmer should take a larger view of these things,

expend thought and study along these lines, and magnify his calling. Let not the young man on the farm suppose there is no opportunity for brains in his business. There is opportunity. Why, it is no trick to be a banker; it is nothing to be a lawyer; it is nothing to be a merchant as compared with being a student of the mysterious laws that govern agriculture. Every other profession on earth is dealing with laws of human devisement. The man ahead of him devised the law that the lawyer deals with; the man ahead of him devised the law that the banker deals with; the man ahead of him devised the law that the merchant deals with; but the infinite God devised the laws that the farmer deals with. The farmer must be a man of profound penetration if he interprets God Almighty. This animal is the product of the mystery of life, and I say to you, gentlemen, we need a larger, a stronger, a brighter, and a grander idea of what we have to do.

I want to speak now to you along some of the lines of economy. You see I am skimming this question. I never attempted to speak of it in my life but what I felt as though I wished that I had a hundred years to talk in. It is so wide as I stand and look at it; it unfolds in so many ways to me, and the necessity of knowledge, knowledge, knowledge, skill, skill, skill, thought, thought, thought, comes to me in so many ways; I look and see my fellows about me, men who are pursuing the vocation of dairymen, struggling hard, struggling daily, and doing it with the idea that they can solve these problems with but little thought. Let me tell you a little story drawn from personal experience sixteen years ago.

A German came into my office—the county I live in, Jefferson county, is composed seventy per cent of Germans, and they are very thrifty people—he came into my office and he says to me, “I like if I shall speak with you just a little vile, can I?” “O, yes, Carl.” Then he sat down and touched my heart at once, for I saw that simple sincerity which bespeaks the man. He says, “I hear you talk in the school-house about the dairy business. I got me sixty acre land; I got me nine cows; I got my frow; I got me six children—I

think sometimes I got me too much children"—then he shrugged his shoulders—"I have got my mortgage, and I work"—then a serious shade came over his face—"I work, mine Got, I work in the morning, I work all day, I work at night, and that mortgage hold me down, hold me down, a good while"—and there was an eloquence in the man's plea—"I think sometimes may be if I speak mit you I learn something I want to know about dairy business. I got me nine cows; frow make butter; the man in the store say that butter don't smell good, and that butter was bad; then I get me some codfish or something with that butter, and I get no money; and I work, I work, sometimes I think, into my grave, so hard I work, and I see no light." My sense of sympathy arose at once, and I said, "I must be practical with this poor German; I must get down to bedrock; what advice I give must be down to where he can take hold of it. This simple plea, "I got no money," affected me. I said, "Carl, you have money enough to buy two kerosene barrels, have n't you?" "Kerosene barrels! don't that make a stink mit dat butter?" "Well, said I, Carl, fill the barrels full of straw, and we will burn out the oil. Now these barrels will make two tanks, and you have a good wind-mill on your place, and a good well. Now, you set the milk in the house, where the frow puts the cabbage and sour-cROUT, and other things that produce all these different scents, and they get into the milk." "I think so," he says, "that what the man says." "And you cannot make nice butter; and then you take it to this home market." "Vell, I see me no light." It was touching. "Now, you take those two kerosene barrels and make a little house near the wind-mill; and then you have money enough to buy you some shotgun cans, down here; about ten or fifteen dollars, Carl, will fit you out." "Is that all? I think that cost me hundred dollars, if I get started." Then I said, "Now, look here; I want you to set this milk in this cold water, and do so and so, and then gather the cream, and when you have got that can full of cream—there will be about eighty pounds of it—I will come down and

make you a tub of butter, and I will try to show you clear out to the end, where the dollar lies." So I went down with a very light heart, taking a churn in my wagon with me, and a little butter worker, and took off my coat. The frow says to Carl all the while, "Carl, Carl, that Yankee is a humbug." But Carl believed in me sufficiently. "Now," said I, "Carl, we have made the butter, and it is in a very neat little package, and it looks neat and nice, don't it?" "Sure." "Now, we will sell it." "Where will you send it?" "To Chicago, which is a butter market." "Got in himmel, I will never see that butter again." "O, yes, you will. Now we will send it to a butter market; I will send it to a commission man in Chicago." I wrote to this man, "I send you by express, to-day, a little package of butter, the first fruits of righteousness, from my friend Carl Steven. Take the butter, sell it on its merits, send me an account of sales, and enclose your check for the same." In three days, back came the account of the sale of the butter, at twenty-six cents; and at that time butter that he made, was selling at sixteen cents in the home market. I got into my buggy, took this little account of sales, and drove down to his house. I said, "Come in Carl." And he came in. I took out the account of sales—he could not read English—and explained it to him, and gave him the check. The moisture sprang to the eye of the honest hearted man; he stood a minute filled up; he saw the light ahead. Then, with his check in one hand, and one arm around his wife, he went waltzing over the floor, holding up the check and saying, "Mine Got, this is no humbug; this is no humbug." Now, here is a little piece of practical work. The six children are none too many. This was about fifteen years ago; to-day he owns two hundred and fifty acres of land and a dairy of eighty cows. Every little while a little package of butter comes into my office marked, "To the man who showed me how." I had rather reach a hand out to do a deed like that than be president of the United States. To me there is, in this, some triumph of constructive thought, something done, some enlargement of hope and purpose.

Abraham Lincoln told the following story, which I commend to all dairymen. In 1864 he was waited upon by a deputation of men who found fault with his administration; after they had scolded awhile about how things were going, he says, "Gentlemen"—that old kindly face; I can see him just as he looked when he said it—"Gentlemen, you make me think of old Bob Armstrong. It was a rainy, windy, muddy night, and old Bob wanted a drink, and he wanted it so bad that he concluded to go up to town; and he went up, and he got more than one drink. As the old Irishman said to me once, when I told him that his chimney was not plumb, 'Begorry, it is more than plumb'—so was Bob. He started to go home. With the mud, darkness, a heavy thunder storm, and the whiskey, he found it difficult to make much progress. The thunder was distracting; but the lightning was friendly—it might be dangerous, but it would show a fellow where he was once in a while. By and by came a terrible crash of lightning which knocked old Bob to his knees"—and his prayer I commend to all intelligent, thoughtful men who are engaged in the dairy business, or to any one else—"O Lord, God, if it is all the same to you, I would like a little more light and less noise."

Now, I wish to speak along the line of practical management, for the sake of profit. I have spoken to you briefly of the nature of the cow. I have spoken to you a little concerning handling of cattle—how important it is that we handle this mother from the standpoint of intelligent understanding of motherhood. Now, I want to speak to you a little concerning feeding. It is evident that our profits will increase in proportion as we reduce the cost of production. I make 2,500 pounds of butter per day, but I cannot govern the market price. How much less can a man govern the price who makes only fifteen or twenty pounds per day? The price is beyond us. What can we govern then? We can govern the cost of producing the butter. How shall we do it? By more intelligent ideas of feeding. Nine farmers out of ten consider that they are born to their ideas of feeding; they have inher-

ited them from their grand-daddies. You know the New Hampshire fellow who said that it run in their family to be educated at college. I look into stables and don't find much study or thought on this question.

There is one thought I want to impress upon you, and that is, that the cow is producing a large amount of proteine every day. I said to you that the cow that produced a pound of butter made a corresponding amount of almost pure nitrogen. Now, that calls for nitrogenous food. And again, you feed, perhaps, a succulent food, a food that contains succulent matter, a juicy food; and here comes in the silo. In my own town there are forty-five silos; in the town adjoining, sixty-five; in the county of Jefferson, two thousand silos. Now, gentlemen, we produce food cheaper than you do, and yet you don't build one silo where we do ten. Is that wise? Doesn't the New Hampshire farmer to-day need as much as any man on earth to reduce the cost of producing a pound of butter? Now, that cost is governed by several considerations; first, it needs a cow that will produce a large amount. The average production of a cow in New Hampshire is about one hundred and fifty pounds of butter per year. It takes one hundred and fifty pounds to pay the cost of keeping the cow. It is more in Vermont and New Hampshire than it is in New York or Wisconsin. You need to reduce the cost of production. I have been at work for two years along this line of reducing the cost of production of this proteine food. We need a food which contains proteine, the albuminoid property of food, because a constant draft is made upon the system of the animal to produce it. The reason you buy cotton-seed meal and linseed meal and bran is, because it contains nitrogenous food, and you know that you are obliged to have it. Now isn't there some way for you to produce it and save the purchase of it? As practical men who are down close to our work, we must study constantly how to keep our money in our pockets, how to apply the surplus on our side of the account; we must constantly study how to reduce the cost of production. You must do with what you have. I

do not believe in trying to revolutionize all your farms, turn your old barns into new ones; but let a conservative quality of judgment take hold of what you have got. You are buying bran. I don't know what is the price of bran—twenty-two or twenty-three dollars. Over four hundred carloads of bran used to be unloaded at my own station every year, and the farmers came from some distance and drew it away. The men who are in the bran business are adulterating it at a great rate.

There is something that New Hampshire men can do along this line of the production of proteine food, and they can do it almost anywhere in the dairy business, and that is, he can grow pease. I have been making a study of the growing of pease for two or three years, and I am beginning to revolutionize my neighbors. Let me show you just what you can do. A medium crop of pease is twenty-five bushels to the acre; twenty-five bushels of pease will produce 1,500 pounds of pea meal, which is worth for practical feeding every day in the year, 4,500 pounds of bran. I had just as soon have two pounds of pea meal as six pounds of bran, and I would feed it in preference, because I know I am feeding an honest thing. Now, 4,500 pounds of bran will cost, at fifteen dollars per ton, about \$33.75. The question arose, when I started this and found the neighboring farmers were opposed to me, saying, "We cannot grow pease successfully." I said, "You don't know how; you have not made a study of it; you have always sowed pease broadcast and dragged them in, and when there came a rain storm you could see pease everywhere." Now that is wrong. Let us study the physiology of the pea plant and that will give us some idea of what to do. The pea belongs to the leguminous family, and all of them are deep rooters, and the pea must be planted deeply. That is the way we do, and we are very successful in the growing of pease. We take a piece of fall plowing and drag it thoroughly, make a seed bed, and then sow on two bushels and a half of Canada pease; of the small pea, two bushels and a half to the acre; or large marrowfat

pease, three bushels, and we plow them under four inches deep, turn them right under four to five inches deep. When I first proposed that, an old German, living near me, said, "Mine Got, mine Got; they go the oder vay." Now, after that, a bushel of oats is sown to the acre, on the top, and dragged. Care must be taken that the land be not too rich; if it is you get too large a growth of vine. An average crop is twenty-five bushels to the acre. A gentleman in Vermont told me that he had grown as high as sixty bushels to the acre, and that he had repeatedly raised forty bushels to the acre. Now, you see, if you can produce on the farm the necessary proteine food you have done something towards emancipating yourselves, you have learned a little more truth, and "the truth shall make you free."

We need to have a better cow; we need to understand the philosophy of producing a better cow; we need to study the philosophy of better handling; we need, then, to understand the philosophy of more intelligent feeding,—feeding for distinct dairy purposes; and then, we need, above all, to learn how to produce on the same farm the largest quantity possible of this important food that we must feed to the dairy cow. If I could only get the farmers of New Hampshire, and the farmers of Wisconsin to get up a strong organization for the study of just these problems, and have them put their heads together to solve them, I would do more to advance the wealth of the community than I shall ever be able to do by a millionth part. The dairy farmer needs to be more of a student than almost any other kind of a farmer; he needs to be a reader. I wish I could put a book called "Stewart's Feeding Animals," by Professor Stewart, into the hands of every farmer in New Hampshire, and have him study it. Men write me constantly, and say, "What do you mean by proteine and by carbo-hydrates?" Now, it is not much to learn these terms. Why, bless you, we all had to learn the word telegraph and the word telephone, which were Greek to us at first. We need to study this question and get at the science of feeding.

I have sketched some of the outlying questions, and I would be very much pleased to have you ask me any questions where you desire a more specific statement, and if I have sense enough I will answer them.

QUESTION: How early should the pease be sowed?

GOV. HOARD: It is a good thing to sow them just as early as you possibly can, because they are not affected by the early frosts.

QUESTION: What is the price of Stewart's book, and where is it published?

GOV. HOARD: It is published by Professor Stewart; but if any of you will send two dollars to "Hoard's Dairyman," you can get it. I am not speaking for the purpose of advertising; but that book contains a wonderful amount of instruction.

QUESTION: Is it not possible that on some lands it would be more profitable for us to raise carbo-hydrates and buy the proteine food?

GOV. HOARD: I think not, because the proteine foods are the most costly. Nitrogen is the most expensive of foods, either for land or animals. I am certain that at the price you pay for bran and cotton-seed that you can get a very large return from pease.

After a song by the choir the exercises were completed and the institute adjourned.

MERRIMACK COUNTY.

CHICHESTER AND BOSCAWEN.

The Merrimack County Institute was held at Chichester and Boscawen, February 3 and 4. President Humphrey, Secretary Bachelder, County Members McDaniel and Towle, with J. L. Gerrish, of Webster, constituted the representatives of the Board attending.

The Grange at Chichester manifested a deep interest in the institute, and provided a banquet in the hall adjoining, which

was served between the afternoon and evening sessions. J. Frank Towle, master of the Grange, called to order, and N. J. Fitts delivered a cordial address of welcome. Response was made in behalf of the Board by President Humphrey, who also presided at the meeting.

The first subject was "Milk Production," opened by Secretary Bachelder. He said that milk production probably interested more farmers in New Hampshire than any other branch of farming. Our butter has made a great advance in the Boston market in the last six or eight years,—standing about the same now as Vermont butter. A large amount of milk is now sent to Boston by rail, which is an important industry. There are now 111,000 cows in the State, which is a marked increase in point of numbers, and he had no doubt the amount of butter per cow had increased still more. He also gave the numbers of other stock kept, and the amount of fodder raised.

Farmers must seek for better stock, better combinations of feed, and more skill in handling and selling. He recommended a feed of two thirds ensilage and one third hay, combined with a properly balanced ration of grains, according to the tables and charts hung on the stage, and effort being made to feed the right proportion of albuminoids and carbo-hydrates, as a matter of economy. He showed from the tables how to use different feeds, so that the right proportion of one of albuminoids to five and four tenths of carbo-hydrates should be maintained as nearly as possible, as this had been found, after long years of experiment, to be substantially about what was required by the average cow producing milk. This was laid down as a general principle; and whatever a farmer chooses as to the form of feed, he should consider it every time as so much of each element, whatever the particular kind of grain or fodder used. He also called attention to a table of feed and fertilizer values, illustrated in colors, showing the amount of phosphoric acid, potash, and nitrogen in different kinds of foods and farm products. In the case of butter, the farmer could sell a ton and only part with less than fifty cents worth of fertilizer.

J. L. Gerrish followed Secretary Bachelder, giving reasons why a grain ration should be fed to make milk production profitable. It takes no more room for a well fed and valuable animal than for a poor one. Margins of profit are becoming small to the farmer as well as the manufacturer, and the business must be made profitable by economy of feed and knowledge of each individual animal, and their several peculiar motions and capacities for handling feed.

The subject of "Sheep Husbandry" was discussed by both McDaniel and Gerrish, each presenting different branches of the subject. Mr. McDaniel presented it from the standpoint of the medium fine wool and mutton Merino grades for the hillsides and cheap lands. Such places could be utilized best with sheep. He especially would recommend that they be partially stocked with sheep in the proportion of three sheep to one cow. At the same time he would recommend an increase in individual production as well as a numerical increase. The three requisites to success are, the right man—one who loves sheep and can be kind and considerate of their wants; the farm—which should be adapted to the business; and a well selected flock of square, short-legged sheep—good at both ends, and carrying about eight pounds of wool, unwashed. He was no stickler for breed. He had fed apples and a little grain towards spring, and one feed of ensilage daily. He had dumped apples between two hay mows, and put them in his silo, but it was difficult to get apples picked early enough to put in with the ensilage. The fleece of such sheep as he described would pay for the year's keeping in his vicinity, where land is cheap and pasturage plenty. He could get sheep pastured for forty cents a head. He showed instances where small flocks had returned one hundred per cent income in a year. Some one in the audience said that it was worth \$1.25 a head to pasture sheep in Chichester.

Mr. Gerrish said that where land was higher and markets near, a different policy and breed should be followed. Mutton must be the first consideration, and movable fences could be used and land be made rich by feeding more sheep than

there was grass for, giving liberal grain rations and turning the flock over every year. This required some capital invested, and judgment in buying and feeding. This was intensive sheep husbandry, while the other might be extensive.

There was an audience of one hundred and fifty or more at the evening meeting, and Dr. Towle never presented his horse talk more acceptably. He advised breeding of one of three classes—the general purpose, gentlemen's driving, or the American trotting-horse, whichever the man had a taste for. He gave a black eye to cheap service horses, and recommended death by the knife, the purchase price to be raised by subscription.

President Humphrey followed with an address upon "Farmers' Opportunities," which has been reported previously.

The institute was successful in every particular.

On the following day sessions were held at Boscawen, the subjects and speakers being about the same as at Chichester. The town hall was well filled in the evening, and the representatives of the Board were accorded most courteous treatment at the hands of the farmers of the vicinity, who manifested a deep interest in the proceedings.

BELKNAP COUNTY.

SANBORNTON.

The Board of Agriculture were fortunate in selecting Sanbornton as the place for holding a farmers' institute for Belknap county. On Tuesday, March 15, President Humphrey and Secretary Bachelder, with County Members McDaniel, Towle, and Mann, met one of the most interested and enthusiastic audiences of the season, in the town hall of this grand old farming town. The roads were bad and the weather severe, yet this did not prevent the people from coming to the meeting.

President Humphrey was introduced by G. B. Lane, of

Sanbornton, master of the Grange. Much credit is due Master Lane and the members of his Grange for the interest taken in advertising the institute, and in providing a fine farmers' supper, which was served between the afternoon and evening sessions, and to which all were invited to remain. This afforded the Board an opportunity of becoming acquainted with the people, and the discussions of the afternoon were enthusiastically continued in a private way around the supper table and during the two or three hours intervening between the sessions.

The first speaker was Secretary Bachelder, upon the subject of "Dairying." He pointed out certain well established principles in the business and explained the use of feeding tables and food combinations from the charts which had been placed upon the wall. The table of fertilizing values in feeding material was an interesting branch of the subject, which was also illustrated by a chart.

George W. Mann, of Benton, the newly appointed member from Grafton county, followed upon the same subject, speaking more especially in regard to the establishment of creameries, and advising the business of dairying to be conducted in connection with sheep husbandry. Cows and sheep can be kept in the same pasture with greater economy of feed than either alone.

Charles McDaniel, the Sullivan county member, spoke upon "Sheep Husbandry," and there was developed a good interest in the subject. The points made have been reported from a previous institute. Anyone who doubts the interest of the people of the State in the enforcement of a stringent dog law would have had such doubt considerably shaken up by the enthusiastic applause which greeted all reference to the most stringent measure for the legal restraint of the canine race.

Alonzo Towle, of Freedom, the member from Carroll county, was the first speaker at the evening session, upon "My Father's Farm and Mine." This lecture was a clear presentation of the scenes in farm life of fifty years ago com-

pared with that of the present time ; contrasting the hardship and necessary economy of the former period with the advantages and luxuries of the farmer's home at the present day. The farmers' disadvantages of the present time were not forgotten, and various remedies were suggested. A point well taken was the suggestion that if the laws of our State are not satisfactory to the farmers, they have only themselves to blame, for they have always had a majority in our Legislature. About the worst feature of our farms to-day, and the greatest difference between "my father's farm and mine" is the too frequent mortgage, sometimes contracted to gratify luxuries, desires which were entirely unknown to the former generations.

President Humphrey was at his best in the closing lecture of the evening, upon "Farmers' Possibilities." His words of encouragement were vigorously expressed, and will be long remembered by those who heard him, and will have a good effect from the sincerity with which they were made.

Pleasing music was furnished at the evening session by the Sanbornton choir, and the exercises closed with a hearty vote of thanks to the Board of Agriculture by the hundred or more present.

HILLSBOROUGH COUNTY.

TEMPLE.

An institute for Hillsborough county was held at Temple, March 29, the Board being represented by Hon. George A. Wason, county member ; Hon. John D. Lyman, of Exeter ; George W. Mann, of Benton ; and Secretary Bachelder. The afternoon session was devoted to the subject of "Dairying," opened by the secretary and continued by Messrs. Mann, Lyman, and remarks by several in the audience. At the evening session the hall was well filled with an attentive audience. Mr. Wason delivered an address upon "Raising Farm Stock," describing in detail the various points essential to success. Mr. Lyman followed on the subject of "For-

estry." At the request of the audience, the secretary repeated the explanation of the stock-feeding tables which was given at the afternoon session. The farmers of the town took a commendable interest in the entire exercises, and the Board came away stronger in the belief that the smaller towns are the most profitable localities for institute work.

ROCKINGHAM COUNTY.

NOTTINGHAM.

An institute was advertised at Nottingham for December 29, but owing to the prevalence of la grippe, Dr. Towle, of Freedom, was the only advertised speaker able to attend. In consequence of a severe rain storm the attendance was not large. The afternoon session was devoted to a discussion of "Corn Culture," the time being mainly occupied by Dr. Towle.

In the absence of the regular speakers the audience desired the evening session to be devoted to a discussion of the objects of the Grange, and Dr. Towle again addressed them for an hour or more. Following this, Pawtuccoway Grange, No. 166, was organized, and the institute brought to a successful termination.

EPPING.

The State Board of Agriculture held an institute at Epping, April 20, closing the series held in the several counties, during the winter and spring. This institute was held by invitation of Rockingham Grange, recently organized in the town, and which had appointed a committee, with A. C. Buswell, chairman, to make the arrangements. Owing to the pleasant weather, which made farm work possible in an unusual degree, for this season of the year, the afternoon session was not fully attended, but a larger number came in the evening. Hon. John D. Lyman, of Exeter, the member of the Board from Rockingham county, presided, and opened the exercises

with an address of a general character, referring to the marked improvements in agricultural methods in recent years, and to the still further advancement that might be expected in the future.

Secretary Bachelder discussed the nutritive elements of different fodder and grain rations, and explained the principles upon which is based economical and successful feeding. The quality of the product as affected by different systems of feeding was brought out in the discussion which followed.

Dr. L. Chesley, of Exeter, gave the result of experiments in pork production, and emphasized the importance of the most rigid cleanliness if the best quality of pork was to be obtained.

Capt. E. M. Shaw, of Nashua, executive officer of the World's fair commission, participated in the agricultural discussion, and followed with an address upon the importance of taking an active interest in the agricultural exhibit at the World's fair, at Chicago, from our State. The means to be employed for collecting the exhibit were fully explained and various questions from the audience were answered.

Dr. A. C. Buswell, chairman of the committee of arrangements, urged the importance of farmers taking an interest in attending meetings and becoming more familiar with the principles and teachings as established by experimentation and research.

The evening session was opened by Charles McDaniel, of Springfield, member of the Board from Sullivan county, upon "Farmers' Organizations." The necessity of such organization for the dissemination of knowledge, and for securing just legislation, was clearly stated. The work of the Board of Agriculture for the past twenty years had accomplished much in awakening thought and stimulating investigation, resulting in better farming and more advanced systems in the various lines of production. The Grange, which has been in operation in our State for eighteen years, has extended an important influence in the various lines in which it is interested. The social, educational, and financial condition of the

farmers is rapidly being improved by the three thousand meetings now annually held by the one hundred and fifty Granges in New Hampshire. The legislation, both state and national, secured through the influence of this organization, is one of the many ways in which it is working, and in which its influence is exerted in favor of the entire farming community.

Chairman Lyman followed with an address upon "Forestry," illustrating with samples, various points of importance. A knowledge of the growth of trees under different conditions and various degrees of thinning, was one of the practical benefits to be derived from a study and better understanding of the principles of forestry. An animated discussion followed the address, in which the speaker was able to take strong ground in favor of the principles advanced. At a late hour the discussion of the subject, and with it the exercises, were brought to a close.

In closing the report of this, the final institute of the season, it may be added, that as a whole, they have exceeded in interest and attendance those of previous years. The average attendance has been over one hundred, and there is every reason to believe that there exists an increased interest among the farmers of the State, in the study and investigation of the various agricultural subjects in which they are directly concerned.

N. J. BACHELDER,

Secretary.

AGRICULTURAL ORGANIZATIONS.

10

GRANITE STATE DAIRYMEN'S ASSOCIATION

OFFICERS.

J. M. CONNOR, <i>President</i>	.	.	Hopkinton.
C. H. WATERHOUSE, <i>Vice-President</i>	.	.	Cornish.
J. G. TALLANT, <i>Vice-President</i>	.	.	East Concord.
J. L. GERRISH, <i>Secretary</i>	.	.	Webster.
N. J. BACHELDER, <i>Treasurer</i>	.	.	Andover.

TRUSTEES.

O. M. TENNEY, <i>Rockingham County</i>	.	Hampstead.
A. B. LOCKE, <i>Strafford County</i>	.	Barrington.
G. S. PHILBRICK, <i>Belknap County</i>	.	Tilton.
L. T. BROWN, <i>Carroll County</i>	.	Tuftonborough.
JOS. BARNARD, <i>Merrimack County</i>	.	Hopkinton.
W. E. GAY, <i>Hillsborough County</i>	.	Hillsborough.
D. W. RUGG, <i>Cheshire County</i>	.	Sullivan.
G. W. STANLEY, <i>Sullivan County</i>	.	Langdon.
W. D. BAKER, <i>Grafton County</i>	.	Quincy.
S. T. NOYES, <i>Coos County</i>	.	Colebrook.

SECRETARY'S REPORT.

On account of the enterprise of Woodsville people in furnishing halls and good hotel accommodations, and the fact of the goodly number of creameries and private dairymen in Grafton county promising a full exhibit of butter and cheese, that point was selected by the executive board as a proper place for holding the annual meeting.

So far as the exhibit was concerned, the anticipations of

the officers of the association were more than realized, and the exhibition of dairy products was the largest yet shown in the State.

The programme was carried out successfully, but the attendance was hardly satisfactory, partly from the same cause as at Plymouth a year previous—prevailing sickness.

Other county meetings were contemplated during the winter and spring and two or three invitations were conditionally accepted; but owing to long protracted sickness and the death of the secretary's wife these meetings, which had been partially arranged for, were dropped, which leaves, we hope, sufficient money in the hands of the treasurer to guarantee a more than usual amount of talent at the next annual meeting.

EIGHTH ANNUAL MEETING AT WOODSVILLE, JANUARY 19 AND 20, 1892.

Although in the matter of average attendance the association was unfortunate this year, as two years earlier at Plymouth, on account of prevailing sickness, yet in point of interest the meetings never were entered into with more enthusiasm by dairymen present. In one case, Tuesday evening, the meeting could not be civilly brought to a close until half past ten, and even then members lingered in the hall until the janitor gave the hint to go, by extinguishing the lights. The first half of the afternoon of the first day was spent in exchanging the usual compliments.

County Member W. D. Baker called the meeting to order with a few well chosen words regarding the good dairy locality in which they were assembled, and noted for the making of dairy products, and introduced Hon. Samuel B. Page as the probable first mayor of Woodsville. Mr. Page proceeded, in his usual style of eloquence, to speak for the village of Woodsville. Sometime in the future, he hoped, it would be a city, and to welcome the association to the place. At the close of his remarks, which were well applauded, President Connor was introduced and addressed the meeting.

PRESIDENT CONNOR'S ADDRESS.

President J. M. Connor, of Hopkinton, after responding to the address of welcome in fitting terms, went on to say :

The ceaseless march of time brings us to the eighth annual meeting of the Granite State Dairymen's Association. We bring with us the experience and observation of another year. What does it teach us? Prominent among its teachings is the fact that we have immense crops of all the leading soil productions upon our hands, and were it not that most of the nations of the earth happen to be greatly limited in their agricultural resources, we should find ourselves with a surplus sufficient to render prices far below the cost of production. Others' misfortunes become our opportunity. Until our country becomes older and more densely populated, and so long as peace rules among the nations which are our customers, our leading products, such as breadstuffs, beef, and pork, will be in very uncertain demand. Not so with our dairy products. Butter and cheese of the best quality will remain a luxury — will ever require skilled labor in its production.

Do you realize all there is comprised in the highest and most successful dairying? We may conduct all other departments of farm work with a tolerable degree of success with unskilled labor. The cultivation of our vast wheat and corn crops may be performed by the average laborer. The labor involved, and attention given to herds of cattle and sheep, and to the management of our large hog crop, may likewise be largely performed by unskilled labor. These vast products all find one common level. The broad markets opened for their reception receive this food without criticism, caring little from what State it came or what individual produced it. Not so with dairy products. There are and always will be mysterious problems to solve at every stage of procedure.

There is more involved in the breeding of a good cow than in all other farm animals combined. More scientific knowledge is required to feed that cow, to so adjust her rations as

to obtain the best results, than all the creatures about the premises. With them the work of feeding closes the labors and prepares them for market; but with the cow, her products come to us shrouded in mystery. How many revelations have science and persistent study brought forth during the past fifteen or twenty years regarding milk alone! What a multitude of opinions, of inventions, have been formed and made — and yet who can say “I have fathomed it all”? The milk of different breeds of different cows of the same herd, of all cows under different conditions of food, of shelter, of season, is involved in more mystery than all other kinds of farm product combined. No weights or measures can determine its value; the closest scrutiny cannot define its composition.

To follow the mysterious fluid through all the different manipulations, whether by gravitation or centrifugal power, to separate the golden product from all foreign substances and yet retain its grain, its flavor and its keeping qualities, is the task of successful dairying. An industry that requires so much painstaking, that can be conducted only upon obedience to laws that are established in the very nature of things, must carry its reward with it.

We note with pleasure the constant increase in dairy knowledge, yet too many follow afar off. Doubt, hesitation, jealousy, self-conceit, are some of the obstacles in the way of practical, earnest reform. It is not so much from a lack of knowledge, or, rather, I might say from a general diffusion of knowledge. All the light that is thrown around this industry, diffused in so many different forms, penetrates every farm home. As with the golden rule, for an illustration, every one knows it well, but to follow it is quite a different thing.

Among the obstacles to a more rapid improvement and development of our dairy interests is a lack of business methods, of the real Yankee push among the farmers that we see everywhere else. Here is a man with a capital of \$5,000; he contemplates dairying; he desires to enter this industry as

a matter of business and profit. Now, I assert upon my honor as a man who has had some experience in this business, that to expend this money in the arrangement of suitable buildings, in the purchasing of the right kind of stock and how to breed it, to provide himself with all the paraphernalia for dairy work, to know how to feed and run those machines called cows, to take the products of these machines, remembering that each machine has peculiar characteristics of its own, to determine those qualities, to utilize the different elements he finds there to the best possible advantage, to seek out his market and place it there upon the best of terms—I say, to accomplish all this to the best possible advantage, up to the highest knowledge we have, requires greater power of thought and discrimination than any other industry or profession under the light of heaven. And why? Because to conduct a bank, a railroad or any class of manufacturing, one man is only following in the footsteps of another; he is following out laws, rules, and methods laid down by man. But the dairyman who has to interpret and deal with God's infinite and eternal laws has a mission to perform as much higher as the works of the Infinite are above the finite. The thought often comes to my mind, and we do well to remember as we criticise the farmers' methods, that we ought to be more lenient, in view of the stupendous forces that surround him, and the almost infinite variety of laws with which he is brought in contact. It is often remarked, "Why doesn't a farmer keep an account of his farm receipts and expenditures, so he can determine just what a pound of beef or pork, butter or cheese, will cost him; how much it costs to produce a quart of milk or raise a bushel of corn or potatoes?" Now, my hearers, while I realize that he may and ought to conduct his business so that he can approximate somewhat the cost of production, it would be wholly impossible to do it with the accuracy and minuteness with which it can be done in all other departments of business.

Briefly, in closing, we have reason to congratulate ourselves upon the progress being made in this industry we

represent in our State. The most sanguine would hardly dare predict so much during the brief period of our existence as an organization. In view of all the light we have regarding each branch of agriculture, we may with safety urge our fellow farmers to enlist in dairying, with the assurance that, if conducted upon the best known methods, it will afford the most ample returns, and has the best assurance of permanency. Let us, then, enlist the most progressive thought, and push on the good work in every section of our State, and so widen the scope of this industry that New Hampshire shall rank among the foremost of the New England States in the quality and quantity of her dairy products.

EVENING SESSION.

The first thing of the evening was Prof. James Cheeseman's address on "Creameries." He first showed a sample test of milk, and explained how important it is that a correct sample should be taken. Ladies are especially adapted to the use of the Babcock tester, and are being employed for this purpose. There is no test now of quality for butter fat, but we are working toward that, and in all probability in a few years the quality as well as the quantity of the butter fat will have to be considered in making dividends. Variation of quality is due to breed and feed, and may be due to the individuality of the cow. These meetings are designed to aid those in the midst of whom they are held, by bringing to them and exchanging with them the knowledge and experience of others at a distance and from other States, for what the locality may contribute in return. The speaker takes off his hat to the private dairy, which makes the most and the best butter consumed. Flavor is a very important point in butter. This is largely determined by what transpires in the stable. Feed, water, cleanliness, and climate have much to do with the flavor of butter, and there are variations in localities. Not only do cows turn a better and larger amount of butter when well fed and nourished, but even the well nourished and thrifty vegetable contains more nutrition to a given weight.

It is the same with the dairy products from well nourished cows. The New England dairymen have achieved success and notoriety as good butter makers because of their wise discrimination in selecting dairy herds and caring for them. Why should not every farmer plant annually more corn to feed his herd? This in conjunction with clover makes a good food for butter production and a good dairy crop. A careful estimate made by Mr. Baker of the cost of growing an acre of oats puts it at twenty-one cents a bushel, allowing nine dollars for the value of oat straw as fodder. Well grown clover, peas, and oats make a good combination for butter cows. It is more economical to buy cotton-seed and linseed and grow other feeds. Peas and oats are best grown by plowing in the oats three to four inches deep, then sowing the oats and harrowing them in. Clover should be the central feature of the rotation in producing more nitrogenous foods. There is no north, south, east, or west in dairying. It is a matter of judgment, selection of cows, and conformity to condition. The question of choice of making creamery or private dairy butter is one for each dairyman to decide for himself. Local conditions and individual circumstances must determine in each case. There must be an observance of cleanliness. The Contoocook Guernsey creamery at Brattleboro made an exhibit of butter that scored ninety-six points, and only one other exhibit went above and scored ninety-seven points. The system of traveling instruction in cheese-making, which was introduced into Canada by Prof. L. B. Arnold, has now been introduced into Wisconsin and New York, and we need just such a system of inspection and instruction in all our creameries. The speaker next referred to some of the difficulties of running separators, which, if not obviated, lead to great waste. Great care and judgment are required to get the cream lost down to the lowest per cent. By the gravity process there is much less loss of fat in dairy herds that give milk containing large butter globules.

LEADING POINTS IN CHEESE-MAKING.

BY COL. T. D. CURTIS.

In approaching the subject of milk and its products, or even a single branch of it, the field is so broad and involves so many details, that I am always at a loss what to say and what not to say. I am to-day confined to "leading points in cheese-making." This by no means reduces the subject one half, nor one third, for while I am to treat only leading points in one branch, it leaves open to me the whole selection and feed of the herd, the handling of the milk and all the paraphernalia and manipulation of the cheese factory to select from. I can only touch upon such points as I deem of comparatively the most importance, or those in which mistakes and troubles are most likely to occur, or do most occur.

GOOD MILK.

It is a mistaken idea which some may have that the quality and condition of the milk is not of as much importance in cheese-making as in butter-making. The finest cheese cannot be made without the best of milk; and this involves the best of cows, in the best condition, fed on the best of food, watered with the best of water, milked in a clean place, in the cleanest manner, into clean vessels, the milk then at once put in a clean place, where it shall be thoroughly aired and cooled until the temperature is down to 70° or below, but not below 60°. Then, whether kept at home or at once sent to the factory the milk should be moderately agitated, so as to keep the cream from rising, and held at an even temperature until the heating up for the purpose of the application of the rennet is begun. All this I shall leave, with the simple assertion of its necessity, assuming that the milk producer knows his business, has everything as it should be, and delivers sound milk in proper condition at the cheese factory. Whoever can not do this should not be called a dairyman, and should abandon the business of dairying to some one who can.

CHEESE MAKER'S RESPONSIBILITY.

If the farmer has done his duty by the milk, and the cheese maker understands his business, he has a comparatively easy task before him. He is now responsible for results, provided he has the proper facilities and can control the conditions. On him devolves cleanliness and a due maintenance of temperature until working up the milk begins. In hot weather, when the morning's milk was coming in warm — the night's milk having been cooled and kept in the vat — I have often found the vat of milk at 80°, or so near, when full, that I have added the rennet at once, without starting the heat — especially when the acid was rapidly coming on. In medium weather, I set the milk at 82° to 84°, and when quite cool at 86°. The make-room ought to be a tight one, and the temperature kept at about 70°. The press-room, especially, ought to be kept at 65° to 70°, or the same as the curing-room. A good deal of cheese has been spoiled in a cold press-room by the curd being chilled, and no one suspected the cause of it when in the curing-room. It was clammy and inclined to be sour and crumbly, but no one suspected the cause why it did not cure down properly.

TEMPERATURES.

When there is trouble in facing the cheese, so as to have a smooth rind, one of two things is the matter — the curd is too cold when put to press, or the hoops and followers are too cold. In the latter case, the whole room will be found too cold. If the curd is warm enough, the facing may be secured by scalding the hoops and followers so as to give them the proper temperature. But this will not prevent the temperature from running down and the cheese becoming chilled.

I see that some of the Western instructors recommend putting the curd to press at 85°; but this, in my judgment, is too high, and renders the cheese liable to taint in the centre. It may work all right in cool weather, if the press-room is a cold one. In hot weather, I would rather have the curd

below 80° , even down to 75° , before putting it to press. I aim to strike an average of about 80° . If the temperature of the press-room can be held at 70° , the curd will press all right, if put into the hoops at 75° . Not enough attention is paid to keeping a proper and steady temperature in both press-rooms and curing-rooms.

RENNET.

A very important factor in cheese-making is rennet. This must be pure, strong, and sweet, or perfect cheese cannot be made with it. If not pure and free from animal tissue, this tissue will soon decompose, throw the cheese off flavor and cause premature decay. If not sweet, then it has already begun decomposition, and you simply stir a decomposing liquid into your milk. Yet I have seen some horrible "witch broth" used for curdling milk — especially when the liquid was prepared at the factory. For this reason, I no longer give directions for selecting, soaking, and preparing rennet, but recommend the use of commercial rennet that is put up by reputable houses. They have all the proper facilities, prepare it in a scientific manner, and furnish it of guaranteed strength. No home preparation that I have seen is as clean and uniform in strength as what is sold by dairy furnishers. Besides, it is nasty, disagreeable work to rub, strain, and prepare rennet for cheese-making. It is also difficult to get vells of desirable quality and in good condition.

Liquid rennet which begins to "smell to heaven" has already lost some of its cheese-making virtue, besides having begun to decompose; and weak rennet makes a weak curd, which easily parts with the butter and causes waste. Most of the talk about failure to retain the butter because the milk is too rich comes from the fact of the use of poor and weak rennet. I have never seen milk so rich as to give signs of waste in the vat; but I have seen waste farther on, in the press-room, and some of that may have been due to the use of bad and weak rennet, which produced a weak and spongy curd from which the warm butter was too easily squeezed. All

cheese makers of experience know that there is a great difference in the virtue of rennets. Old vells make the strongest liquids. Besides, individual rennets vary a good deal in their strength. If one has been using old rennets or vells, those that have been properly kept over a year, and has to change to new rennets saved the previous spring, he will find a marked difference in the feel and texture of the curd. The new rennets make soft, slippery curd, as compared with the curd from old rennets. If I prepared my own liquid, I would surely try to have a supply of stomachs a year old to prepare it from, on the score of economy and the expectation of having a better quality of cheese.

CUTTING THE CURD.

When curd is firm enough to cut, which most cheese makers understand, I begin and cut as fast as possible until the whole mass is about as fine as dent corn. The cutting is generally postponed too long rather than done too soon, and more waste comes from cutting a curd which is too tough than from cutting one which is too soft. The object of cutting is to facilitate the separation of the whey, and of course the more rapidly it is done after the curd is ready, and the evenner and finer the cutting is, the more rapid and perfect the separation of the whey.

RAISING THE HEAT.

It is well enough here to let the curd stand ten or fifteen minutes before starting the heat, meantime rubbing down the sides and ends of the vat, and stirring the curd just enough to keep it from settling in a mass on the bottom. Let the heat be started gently, and the curd be gently agitated, raising the temperature steadily at the rate of about one degree in four or five minutes. If the heat, by accident, should rise faster than this, shut it off at 93° or 94°, to allow the temperature of the centres of the bits of curd to come up to that of the surface, thus equalizing the temperature of the mass throughout; for on the evenness of the temperature depends the evenness of

the action of the rennet. Then at the end of five or ten minutes start the heat again, and steadily raise it to 98° or 100° , as experience and the thermometer may indicate as best for the milk received at your factory — for there is considerable variation in the milk of different neighborhoods, which must be taken into consideration by the cheese maker. This variation is so great that a cheese maker in one factory, unless he is aware of the difference and is governed by it, on going into another factory may not have perfect success. Conditions must be watched and everything be adjusted to them, in many particulars. They may be modified by feed, water, salt, etc., affecting the life of the cows.

Why do we raise the temperature of the curd to 98° , or to blood heat, which is a little above? Simply as a recognition of the fact that this is the natural temperature of the calf's stomach, and at this we naturally presume the gastric elements of the rennet are the most active. We cut our curd to free the whey; we cut fine to get an even temperature and even action of the rennet; and we raise the temperature as nearly to blood heat as we can, to secure the most effective action of the rennet in preparing our curd.

“COOKING.”

The heat once equalized throughout the mass at 98° , or the higher temperature, it should be maintained there until the curd is done, but it seldom is. Constant stirring is no longer required, as the curd has little tendency to pack at a fixed or falling temperature. But here we come to one of the most difficult and delicate points in cheese-making. When is a curd done? When should the whey be drawn? My judgment is that the curd is done, so far as the cheese maker is concerned, when the cheese made from it is ready for market, and not before. As to the whey, it ought to be allowed to escape as fast as it leaves the curd, and the curd should not be allowed to lie in it for a moment. But in practice we have not yet reached this ideal. We are still pegging away at old methods, and keep our curd floating in what it has

rejected until it is at the point of being entirely spoiled by the presence of too much acid, besides all the vile odors, taints, and microbes that may have been in it originally or have been developed by insidious ferments. We need a new system of cheese-making.

ANOTHER METHOD.

I have seen what was called imitation English cheese, by its manufacturer, made without the application of artificial heat. The milk of the cows at night was strained into the vat. The next morning's milk was added to this. The whole mass was thoroughly stirred and mixed together. Then the rennet was incorporated with it, and as soon as the curd was firm enough to break, it was stirred into one homogeneous mass. The whey was drained or strained off at an early stage and the curd dipped into strong flax strainer cloths previously placed in hoops. The corners of the strainer cloths were folded in over the curd, the followers put in, and the screws run down so as to give considerable pressure. After a little, the curd was taken out in the cheese cloth, finely broken up with the hands, and then returned to the press, this operation being repeated until the whey was sufficiently expelled and the curd was what we call done and ready to salt, when it was finally broken up, salted, and put to press in the usual way with upright screws. These cheeses were pronounced rich, very digestible, and always sold for an extra price. I always procured one each fall for family use, and they were always relished. This was quite a wide departure from the common way of making cheese, and avoided all the danger of retaining unpleasant taints by leaving the curd in the whey, and also avoided the danger of being caught by an excess of acid.

WHEN IS CURD DONE?

But to return to our vat of curd, soaking in whey at 98°. We may draw off a portion of this whey at once, always remembering that the more we reduce the volume, the faster

it will cool. We may reduce the amount to just enough to freely float the curd. If we have warm water under the vat, it will help keep up the heat. If we are using dry steam, we can keep a small stream pouring in under the vat, or we can occasionally let in a jet of steam. This will maintain the temperature. But when shall we draw off all the whey? Just before or just after acid begins to show. I prefer to draw the whey while it is yet sweet. One says, the curd is done when a handful of it squeezed together readily rattles apart when the hand is opened. How hard shall we squeeze? I have heard only one man say; he said, "about as hard as you would in milking an ordinary cow!" — not very definite yet. Others say when the curd squeaks between the teeth. Many use a hot iron, just hot enough to melt the curd, and cause it to adhere to it at a certain stage. If the curd is not done, it dries or browns against the iron; if done, it slightly adheres and the curd, when pulled away from the iron, draws out threads an eighth or a quarter of an inch long. Then out with the whey. In most cases this works very well. But, except for aid in keeping the curd warm, or in keeping it loose, the whey may and I think should be drawn much earlier, and the curd placed so that the whey will run away from it as fast as it separates and drains out of it, as by this means we are able to reduce the acid to the minimum — a very desirable point to gain. With a vat in which you can control the temperature, one end should be raised, a rack put in, a cheese cloth spread over it, and the curd placed on the cloth. Here you have your choice to cheddar and grind the curd, or to keep it loose by frequent, you might say constant, stirring. The temperature, at the time of drawing off all the whey, may be lowered to 94° ; some say below, while others say the curd will not part with whey of a lower temperature, but will become soggy, as if water-soaked. I have not tested that point, but have assumed that it is injurious to drop below 90° before you are ready to finally cool down the curd, salt it, and put it to press. But one thing is certain — the lower you drop the temperature, the slower will be what Prof. L. B.

Arnold called "the cheesing process," but which the acid advocates call "the development of the acid." Be sure to hold the curd above 90° until the whey shows a sharp acid, or the curd becomes soft and velvety to the touch and begins to have a cheesy smell.

HOLDING CURDS.

In fact, after the whey is disposed of, there is little danger of injuring the curd by holding it too long. It only serves to hasten the curing. The rennet does its work faster in the warm vat than it does on the cooler ranges. And there is no danger of its "huffing" in the vat. If there were, there is the place to hold it until it ceases to huff. I have seen a curd made of apparently sound milk held until a piece of it cut through with a sharp knife showed it full of pinholes. The proprietor, a more than ordinarily intelligent man, said he had held many curds in that way, and they never failed to show the pinholes, nor to make solid, close-grained cheese. All the gases were evolved by this holding.

SALTING.

I have but little more to add. Be sure that your curd is well broken up or ground before you salt it, and salt it while it is yet quite hot. The application of salt greatly tends to keep the curd from packing. I have sometimes salted a curd before the acid had sufficiently developed, or the cheesing process had gone far enough. I had no curd mill, and this helped in keeping the curd loose. The only adverse effect I could see was that the salt further reduced the temperature and somewhat retarded the operation of the rennet and the development of the acid. Both these operations are continued, especially the action of the rennet, after the cheese is put to press, and in the curing-room until the cheese is ready for market — indeed, it is believed that the rennet action continues until decomposition finishes the job. We often have a small batch of curd left over, and do not hesitate to mix it with the next day's curd, no bad results appearing; yet I have

heard people strongly object to salting a curd before it was ready for the press, lest no acid would appear. Indeed it is a good practice to hold your curd for some time after salting, to allow the salt to dissolve and properly permeate the whole mass, and the curd to resume a soft, cheesy texture.

TEMPERATURE IN PRESS-ROOM.

I have spoken of temperatures in regard to the press and press-room — especially of too low temperature. There is no advantage in a too high temperature. Be careful not to put your curd to press at too high a temperature, and not to tighten the screw or screws too rapidly or put on too much pressure in the beginning. Here is where a good deal of waste is liable to come in — or, rather, to go out. If it is hot enough in the curing-room to make the butter drip from your cheeses on the ranges, and your press-room is in the same wretched condition, why should not the butter run from the cheeses under pressure in the hoops? There is much waste between the vat and the curing-room. Look to it.

DOMESTIC CHEESE.

Some one may want to know how about making domestic cheese. To such I would say the principles for making domestic cheese are the same as for making factory cheese. It is a mere question of adapting means to ends. The aim and end of the domestic and factory cheese maker are the same — the conversion of milk into cheese. If the domestic cheese maker lacks the facilities, he must try to produce the same effects with ruder means. Keep in view the end you are aiming at, and use what means you have to produce the desired results. No matter how you heat your milk, if you do not scorch and injure it. No matter what you set your milk in, so long as it is clean and wholesome. No matter how you cut your curd, so you get it into even pieces, nor in what or how you press it, so you get the whey out. Choose your own curing-room, and remain assured that if you violate no principle or law, you will have no penalty to pay. You

may want to make your domestic cheese a little softer than most factory cheese. You have several means at your command, any or all of which will make your cheese softer. Do not cut the curd quite so fine; do not raise the temperature quite so high; do not keep up the heat quite so long; and do not use quite so much salt.

SUMMARY OF REMARKS BY JOHN GOULD, OF OHIO, ON
"SOME POINTS IN BUTTER-MAKING."

Mr. Gould said: There is no royal road to success in dairying, although it is true that we have made more progress in this line in the last decade than in all the centuries that have preceded. But there is a great deal yet to learn. The average dairyman is only in the primer class, after all, and lots of men who think they know it about all are not out of their A, B, C's. We have learned some things from others, and we are learning some for ourselves. Before we trust "the other fellow" too implicitly, we must run his experience through our own mill, and so, in a sense, make it our own. There are a few secrets in butter-making, but they are open secrets, having been made widely known already. There are some plain reasons why the private dairy can turn out butter that can't be beaten by any other process on the planet; and prominent among them is the great fact that the private dairyman can have complete control from first to last, not only back to the cow and her ration, to the stable and its atmosphere and influences, but even back to the soil from which the ration is grown — and this is what no coöperative or joint stock concern can do.

The cow must be made comfortable and contented, and the stable kept so clean that you can go from your house into it in your slippers and back to the fireside without the faintest suspicion of an odor. There never was a thermometer more sensitive to varying influences than that wonderful piece of animated marvels, the butter-producing cow. You must know her and she must know you — must meet on equal and most

friendly terms, even if she is your superior! To this end, study her peculiarities and needs, feed and treat her with reference to her special mission, so as to enable her to perform her distinctive function up to the full limit of her normal capacity. Don't make a whipping-post of her, or expect her to give off enough caloric while she is being fed on frosted hay to thaw the icicles off the north end of the barn; but take prime care of her, and she will transmit your kind deeds into the coin of the realm and pay you a better dividend than you can get from any other investment.

To make good butter nothing is required, absolutely nothing, beyond the reach of the small dairyman, the common farmer with ten or a dozen cows. I am not now speaking of the easiest or the most economical methods, with their improved appliances, but simply of attainable excellence under the more usual conditions. As a matter of fact, four fifths of the butter made in the country is produced in the private dairy.

The quality of the butter is largely decided before the milk leaves the stable. It is a ready absorbent, and in a very short time will imbibe the odors and influences of the stable. This is one reason why it should be taken to the milk room as soon as it is drawn from the cow. And now, please, don't let it set around until all the other chores have been done, before it is set, but see to this at once; for as soon as it begins to cool the albumen will adhere more or less to the sides of the pail and collect around the butter globules and the fibrin will form a network which will prevent their rising to the surface. So, set it at once.

Again, the milk should be skimmed before it begins to sour, or you will lose the delicate aroma and flavor that are so desirable to be retained, and, instead, have an unsavory article. Hundreds of tons of butter are spoiled in this way. And don't let the cream get positively sour either—don't let it reach the sharp acid point—but just as soon as it has developed a mild and agreeable sourish flavor, churn it, at a temperature in the neighborhood of 55°, but varying accord-

ing to the apparent needs of the batch — for we can never get this thing down so fine that brains and common sense will not be needed — not even the expert can do that!

When you've got your butter, handle it with some approach to common sense also. You can ruin it right at this stage. The best butter in the world is that which has had the least done to it. Don't muss it, and mix it, and rough-and-tumble it, and thrash the life all out of it, as if it were a ball of putty instead of the fine, granulated, golden product it is, but handle it carefully and properly. You want to so work and salt it in the churn as to preserve its grain or texture. If I could have my choice for a churn it would be one that had a swing motion up to the time of separation, and then an end over end motion, to finish up with; but such a churn has not yet been invented that I know of. As a rule, you can afford to give patent appliances a wide berth, not that there are not some good things among them, for there are, but because, so far as quality is concerned, they do not surpass the good old ways, and the possible gain in economy very often is less than the cost and keeping of the invention in order, including the interest on the investment, to the moderate producer — and he is the man we are talking about just now. The shotgun can and the shallow tin pan, rightly used under proper conditions are as effective as the expensive creamers.

Mr. Gould here went into a somewhat extended discussion of the relative importance of feeding and keeping as contrasted with breeding, and said that butter could be made from low grade or even "scrub" cows, of so fine a quality that an expert could not tell the difference if blindfolded. This strong statement was the point for an animated but good natured debate that lasted half an hour or more, and was voted not to appear in the minutes.

REMARKS OF EX-SENATOR J. G. TALLANT, OF EAST
CONCORD, ON "BREEDS AND BREEDING."*Mr. President and Gentlemen:*

The subject proposed for consideration this morning is one that has baffled the skill of thinking men for ages, one that has never been fully and satisfactorily settled, although the rules which underlie—the great principles—apply equally well to men and to the lower animals.

Perhaps it will aid us, in approaching this subject, to speak of the advances which have been made in the breeding of horses. This is something with which many are more familiar than with the breeding of cows, though it is not easy to see that this should be so.

Forty years or more ago, in this country, there broke out a perfect mania for trotting-horses, and the American trotter suddenly became a coveted possession, an object of great interest and value. Men were willing to spend money and time, to do anything and everything to develop speed in their favorites. The rivalry became intense, race-tracks abounded everywhere and the trotting-course became the centre of popular interest at all our fairs. [The speaker here named a number of noted imported horses whose performances eclipsed previous records.] These horses had been systematically bred, and persistently trained, until their inborn capacity was developed to such a pitch that their speed became the wonder of the world.

It was then it began to be seen that while care and training were important, very important, considerations, there was something indispensable back of it—and that indispensable something was lineal descent, or "breed." It was quite remarkable how, sometimes, an inferior looking animal, one that judging from appearance only, would seem to be not more than a third-rate courser, would out-distance those that looked far more promising; but when the record was looked up, it was found that the descent was more or less nearly, but occasionally somewhat remotely, allied to stock that had

been bred as well as trained for special performance — not for beauty, not for size, not for strength, but for speed — just as a certain strain of cows, by no means the most comely, are the best butter producers.

But this is a dairyman's meeting, and we are expected to turn our attention more particularly to dairy processes and dairy cattle. Most prominent among the latter are the Jerseys, Ayrshires, Guernseys, and Holsteins, though there are others of some reputation. These breeds have all been reared under different conditions.

What makes the "breed"? The bringing together, and keeping together, for generations, of animals having certain desirable qualities — inbreeding until these qualities are fixed and the type is so established as to perpetuate itself under ordinary circumstances. For instance, the Holsteins had a large flow of milk but of scarcely average quality. They were stimulated along the line of their special performance and the quantity increased, until they are the largest milkers in the world to-day. They were comparatively loose and coarse in structure, and not close feeders or assimilators. The Ayrshires do not excel in the quantity of milk, but the globules are smaller and it will bear transportation much better — there is not so much "churnability."

Two hundred years ago, or more, on the beautiful Isle of Jersey, where the climate is almost perfect for dairy purposes, where there is in the soil and air something peculiarly favorable to the growth of rich grasses, where there is also something peculiar in the people, who are natural care-takers of stock, a breed of cows had become established. An importation of large, red, Normandy cattle occurred, and it was discovered that the combination resulted in a very superior stock. The strictest prohibitory laws were enacted against the landing of any other cattle upon the island. This inbreeding, under the most favorable circumstances, established the type. At length, the attention of British noblemen was attracted to them, who selected some of the cows to adorn their lawns, not so much for use as for beauty. * * * An enterprising

maker of butter for the English market, Philip Dancey, by the infusion of Jersey blood, developed a strain larger and stronger than that on the island, and several others [whom Mr. Tallant named] had notable cows with phenomenal records.

Darling reached 778 pounds per year, under ordinary circumstances of care and management. Nothing like it had been heard of—a result which grew out of special breeding. [Other large records were given, in England, Canada, and the United States] including Mr. D. F. Appleton's "Eurotisima," who made over 900 pounds, breaking the record of the world—more than the cow's weight. Then it remained for a Dancey breeder, with "Bisson's Belle" to reach 1,005 pounds!

What lessons shall we draw from these facts? The answer is obvious. However much stress we may place upon other things, the prime importance of breed must be admitted. The average Jersey is capable of making twelve to fourteen pounds a week. This is not accomplished with any other breed. What has been realized has been attained in a comparatively short time. We have seen the rapid strides that have been made since many of us were boys—within our personal recollection—and we know something of the progress made during the last two generations. It is for us to make still further advances. The phenomenal instances cited should serve us as landmarks for further efforts. I thank you for the attention you have given me, and await any discussion of the questions that may be developed.

THE PRESIDENT: Gentlemen, we can devote a little more time to this subject, which has been so ably opened by Senator Tallant. If any of you have any questions to ask, or words to offer, I shall be glad to give you the time.

QUESTION: What is the difference between the Jerseys and the Guernseys?

ANSWER: The Guernseys were bred on an island near the Isle of Jersey, are somewhat larger and have a little more

constitution, naturally. The Jerseys are marked with black points, the Guernseys with red or light points.

QUESTION: Is there any difference in the quality of the butter?

ANSWER: The Guernseys make a higher colored butter, but it will not stand the heat quite so well. I have never milked any of them. Among them are many phenomenal cows. The Jerseys' horns stand out a little more and are a little longer than the Guernseys'. It has been supposed that by substituting a male from Normandy, their deficiencies would be obviated. Like the Devonshire and other cattle, they are not so capable of transmitting their good qualities as the Jerseys. This is the general belief in regard to them.

QUESTION: How long do you like to have a cow in milk?

ANSWER: If I could suit myself, I would like to have a cow go dry about six weeks. As a matter of course, you cannot expect them to milk clear up to the time of calving. Sometimes a cow does.

There has been an impression abroad that the cow that gives milk the nearest up to the time of calving is the most profitable, but this is not necessarily true. There are several things to be taken into account, and among them the effect of an almost ceaseless draft upon vital resources. We all know that if a cow's condition is impaired, not only is the quantity lessened, but the quality deteriorated. It is a mistake to think a cow is more productive, in the long run, because she milks the year around. There is much to be considered besides looking out for the last fraction of butter fat. You may take the means to get all or nearly all the butter elements of your milk, and yet, perhaps, with a different breed of cows, you might make twice as much butter. Perhaps it would profit most of us to turn our attention more to breeding, and to look out less for quantity but more for quality.

QUESTION: Don't you think feeding has much to do with it?

ANSWER: No doubt of it. I take the position that in thousands of instances, with such cows as the farmers now

have, the richness of the product might thus be increased one half. You can take a cow that gives a large quantity of rather low quality milk, and by judicious feeding with rations such as have been mentioned in this meeting, increase the richness one half. But the question comes up, how long will the cow stand such stimulation. Nature interposes her checks, and the cow's constitution reacts. If this pressure is continued long enough she will break down. There must be breed back of it. It will not do to over-feed, to artificially exceed constitutional capability. But with the right machine (cow) you can make a pound of gilt-edged butter easier and cheaper than you can make a pound of beef. I need not inform you of their relative value.

[Reference was then made to some phenomenal records of the last few years, and a glowing tribute paid to the Jerseys as "the poor man's friend and mortgage lifter."]

Secretary Gerrish said: "It is surprising that intelligent farmers will continue to run the old machines for making butter fat, at such a loss. The mill men, the men who run the manufactories of New England, are on the alert to avail themselves of every time and labor-saving appliance. If any new thing of merit comes up, they shove out the old machinery at once and put in better. Why? Because they are after the last mill of attainable profit. The business of the world has come to just this point—the profit on the unit of manufacture is very small, often but the fraction of a cent, and yet it must not be lost. They must keep step with their competitors—must 'get there' or fall to the rear. It is an encouraging fact, that, slow as the progress may sometimes seem to us, the farmers of this country are 'getting there' too. This is what our advanced thinkers say. It may take years, just as it often takes years to perfect a piece of machinery, to get a thoroughbred animal, but a good many farm manufacturers have already reached this point. I think none of us ought to be satisfied until the farmers of this country take out their old machinery, and put in something that will do better work and more of it. Not only should the farmer get thor-

oughbred stock, he should take the old machine out of his dairy, and put in such as will make more pounds in a year, for that means more dollars at the end of the year. Let him get a silo too, and get into shape to make butter all the time."

THE PRESIDENT: A very important matter has been alluded to by our secretary — the necessity of applying business principles to the branch of industry in which we are engaged. The manufacturer must not only keep himself posted in regard to the character of his machine — which corresponds to our cow — but he must have a knowledge of the material that is to be fed to the machine, whether it be cotton or wool — and it is especially true in wool. This material corresponds to the food which we give our cows. It must be carefully sorted into different lots, according to its length, the quality of the fiber, etc., and its adaptation to the manufacture of different grades of cloth. He must become familiar with the different qualities, and the best use for each.

Now take the ordinary farmer or dairyman, what is his knowledge of the qualities of different kinds of food? How many can so adjust food combinations as to produce the best results, so as to get the best quality and the largest quantity with the least outlay? Not many. You know that it is often remarked, "Any fool can be a farmer," but I would like to know if it doesn't take as much — yes, more brains, to select and apply the proper food to the living machine than to the inanimate one? It certainly requires more judgment and knowledge, or ability, to predict the effect and take into account all the influences and combinations bearing upon the cow, than to select, assort, and prepare the fleece of wool so as to produce a given kind of goods. The machine with which we have to deal is wonderfully responsive to influences of every kind, not of diet only but even of disposition. Scientists have made helpful analyses, but they have not comprehended Old Brindle fully. We know but little about her, after all; but let us get all the knowledge we can, and then use it to the best possible purpose.

REMARKS BY GEORGE W. STANLEY, TRUSTEE FOR
SULLIVAN COUNTY.*Mr. President and Gentlemen :*

I do not feel that I ought to occupy much of your time this morning. I see you are Jersey men all around me. But perhaps I can give you a little of my experience with short-horns.

I began only a few years ago as a green hand in the business, and what little knowledge I have picked up I have gleaned since then. Until this year my herd consisted of ten cows; I now have twelve. I did not begin to keep a record until 1888. That year my cows averaged 306 pounds, the next year 307, the next 312, and last year 320. This does not include the free use of all we want in a family of from six to ten persons. I raised these cows on my own farm, from calves. The calves are now in so great demand by my neighbors that I have to almost fight to keep them. This is what Durham shorthorns, that some people think are hardly worth keeping, have been doing for me. I have a few grades, very few, and only one Jersey cow, nearly thoroughbred; have had her only a short time. I got her for experiment. She is claimed to be a very fine cow, but with just the same keeping and care I found that she only gave twelve pounds of milk to eighteen from the Durham I tested her with right along.

In reply to a question as to the Jersey cow's butter ancestry, and in connection with the remark that this might make a great difference, as cows of the same breed vary widely, according to heredity, Mr. Stanley said he was not well enough acquainted to say. * * * My herd is made up of two-year-olds, three-year-olds, and so on, just as they have come. Among other reasons why I prefer them to the Jerseys, I think them less nervous and susceptible to varying influences, and more quiet.

I raise all the corn I use, and my farm yields an abundance of excellent hay. I feed about an averaged ration of cob and corn meal and other feed twice a day, but make some differ-

ence in the ration, according to the size and peculiarity of the animal — some will assimilate more than others. Have never fed cotton-seed meal until this winter, a very little during the past month or so, but not enough so that I can say much about it. I think feed is more than half the secret of what success I have had.

I have no silo; have not found that I needed one yet, but may. I make a special effort to get my hay all in early and in the best possible condition. Begin to cut it about the twentieth of June and mean to finish before the fifteenth of July. Had rather pay for extra help than be late. [A voice: this is earlier than most farmers.] I cut a crop of rowen afterwards. Mr. J. D. Howe, from Lancaster, being called for, said he wished to be excused. I do not think anything I can say will be instructive to any one here. I find that the men here are talking common sense, but there seems to be some difference of opinion as to whether it is feeding or breeding that mainly does the business. [A voice: I think it is both.]

THE PRESIDENT: It is very evident that Mr. Stanley is going to produce a record, give him time, that will make somebody stare. With superior cows, handled intelligently, and with the right kind of feed — which Mr. Stanley certainly has, although perhaps not as well balanced as might be — he will not fail in this, provided inbreeding does not give him a set-back.

JOHN GOULD: Every cow has a born limit of performance which cannot be exceeded profitably. It can be done for a while, but it costs too much. There are cows in the same herd that can be made to do a great deal more than others, by unnatural stimulation; but it is sure to react in the long run, and, besides, the product is not so good. What's the use in everlastingly straining after a big lot of five-cent grease when we can just as well have a respectable quantity of thirty-cent butter? What we want to find out as nearly as possible is, the most the cow will do without becoming abnormal, and stop right there. Sometimes a cow has an undeveloped capacity, through heredity, and may surprise us by her per-

formance under favoring conditions; but there is sure to be a limit somewhere, beyond which it is impracticable and unprofitable to force her. * * * It is very important to have a well balanced ration. The day is about past when farmers expect to make good butter and plenty of it out of corky turnips and frosted hay! With good heredity, good feed, proper stabling, and kind treatment, a great deal can be done and wonderful results reached with herds that do not rank very high in pedigree.

The question of warming water for cows drew remarks from Senator Tallant, President Connor, and Mr. Stanley. The latter said he warmed the water to 55° and let the cows drink twice a day, at about eight o'clock in the morning and four at night.

Mr. Gould said that it is surprising how much some cows will drink. There are cows that will not drink more than forty to forty-five pounds at a time, but others will not stop short of seventy or even more — making, say, one hundred and forty pounds at the two drinks. Now to raise this amount of cold water to blood heat involves a heavy expenditure of vital warmth, and for the time being puts a check to, if it does not actually stop the secretion of milk. With water at about 50° on a cold day, the cows drink naturally, instead of sipping and leaving before they are satisfied. When the vital temperature is lowered, it requires extra food to regain and maintain it.

President Connor thought the temperature of the water should bear a definite relation to that of the stable; if the stable is cold the water should be warmer, but of course not too warm. Just as with human beings under like circumstances something warm does them good, within reasonable limits as to quantity and temperature. In a comfortable stable, from 48° to 50° is about right. But they should not be compelled to drink ice water any time, and especially when they are already on the verge of discomfort from cold.

Mr. Colby, of Tilton, whom the president introduced as a live member of the association, expressed his gratification at

the instructive proceedings and discussions of the convention, heartily agreed with those who had emphasized the importance of feed, care, and shelter, as well as of pedigree, and believed that we were only just beginning to find out what the more ordinary run of cows could do for us if these matters were intelligently and systematically looked after. He thought if the farmers would take a good agricultural paper and read it faithfully, it would tend to develop an interest in such conventions as this, and they would be led not only to attend them, but to bring their wives along, and he was sure that it would not only put money in their pockets, but valuable ideas in their heads.

Prof. A. H. Wood of the New Hampshire Experiment Station exhibited four samples of butter representing four different breeds, as an object lesson. The figures over the name of the breed indicate the number of cows of the breed :

TABLE.

UNCOLORED.	2	2	1	2
	Ayrshire.	Durham.	Holstein.	Jersey.
Pounds of milk for pound of butter	23.92	20.25	32.06	17.54
Pounds of cream	4.73	4.18	5.26	4.19
Pounds of skimmilk	19.19	16.07	26.80	13.35
Churning temperature	48-56°	48-54°	48-54°	48-58°
Amount of color, c.c. . . .				
Time of churning	27m.	15m.	23m.	47m.
Pounds of buttermilk	3.83	3.38	4.11	2.84
Per cent of fat in milk	4.17	4.44	3.05	5.43
Per cent of fat in skimmilk . . . .	.39	.13	.35	.22
Per cent of fat in buttermilk . . . .	.41	.48	.53	.26
Total fat lost in milk . . . .	.996	.899	.978	.952
Fat lost in skimmilk . . . .	.077	.021	.094	.029
Fat lost in buttermilk . . . .	.016	.013	.022	.007
Total per cent fat lost	9.3	3.8	11.9	3.8
Temperature of milk at separation	76°	82°	74°	77°
Speed of separator	6100			
Speed of churn	82°			

COLORED.	6 Ayrshire.	7 Durham.	3 Holstein.	5 Jersey.
Pounds of milk for pound of butter	23.52	23.80	28.46	16.81
Pounds of cream	4.29	4.10	4.54	2.75
Pounds of skimmilk	19.23	19.70	23.92	14.06
Churning temperature	47-54°	47-53°	48-55°	48-59°
Amount of color, c.c.	1.4	1.0	1.6	5.0
Time of churning	27m.	24m.	33m.	85m.
Pounds of buttermilk	2.99	2.67	3.35	1.86
Per cent of fat in milk	4.17	4.17	3.44	5.56
Per cent of fat in skimmilk . . . . .	.17	.16	.26	.16
Per cent of fat in buttermilk . . . . .	.52	.43	.74	.17
Total fat lost in milk . . . . .	.98	.99	.98	.94
Fat lost in skimmilk . . . . .	.033	.032	.062	.022
Fat lost in buttermilk . . . . .	.016	.011	.025	.003
Total per cent fat lost	5.0	4.3	8.8	2.6
Temperature of milk at separation	92°	91°	91°	90°
Speed of separator	6400			
Speed of churn	82°			

JUDGE'S REPORT.

NEW HAMPSHIRE DAIRYMEN'S ASSOCIATION, WOODSVILLE CONVENTION.

DAIRY PRODUCTS.

Your exhibit of dairy products displays a remarkably high average of quality for winter-made butter. In scoring the butters I have taken the September butter as the standard of perfection and the shade of color found in the three breed exhibits of colored butter from the State Experiment Station as the standard color. These butters scored 88 points.

The awards are as follows:

B. Dairy Prints.

W. D. Baker, Quincy	90.50
J. M. Connor, Hopkinton	87.50
J. R. Whipple, New Boston	85.00

A. Creamery Prints.

North Haverhill Creamery	88.00
New Boston Creamery	86.00
Guernsey Creamery, Contoocook	85.50

Granular Butter.

T. S. Pulsifer, Campton	1st.
Guernsey Creamery, Contoocook	2d.
W. D. Baker, Quincy	3d.

DAIRY.

Ten-Pound Tubs.

T. S. Pulsifer	86.00
W. W. Carr, North Haverhill	85.00
J. W. Pulsifer, Holderness	84.00

Creamery Ten-Pound Tubs.

Guernsey Creamery, Contoocook	86.00
Haverhill Creamery	85.00
Cornish Flats	84.00

Uncolored Butter.

J. M. Connor	86.00
A. H. Colby	84.50
Minor & DeHuffs, Lisbon	83.00

Plain Dairy Cheese.

J. W. Pulsifer	90.00
J. W. Pulsifer	86.00
H. C. Carbee, Woodsville	81.00

Dairy Sage Cheese.

T. S. Pulsifer, Campton	84.00
D. B. Pulsifer, Campton	81.00
T. S. Pulsifer, Campton	80.00

In the print butters for exhibition and competition which scored 80 points and more, are 25 out of 40 samples. In the cheese classes, 6 out of 13 scored 80 points and over.

The first premium cheese is of very high character and well deserves the recognition of merit accorded to it. It is the best made and highest flavored farm-made cheese I have ever examined.

Altogether this exhibit of dairy products was excellent and deserves the greatest possible encouragement.

JAMES CHEESEMAN.

ENSILAGE.

BY JOHN GOULD, OF OHIO.

Mr. President, Ladies and Gentlemen:

I regret that I am feeling so badly this afternoon and since ten o'clock last night but if you will bear with me I will do the best I can to give you some of the latest deductions in ensilage, up to the present time.

The whole character of the ensilage question has changed from what it was formerly. The man who speaks on ensilage now need enter into no labored defence of it—twenty thousand silos in the United States is the best argument, and every year adds five to ten thousand to the number. So this afternoon I shall not attempt any labored defence of the silo, but shall confine myself to some facts concerning it.

In the first place we want to understand that the silo is especially for the corn crop of the United States and Canada. That it is especially adapted to the corn crop is best shown by the fact that last year we had seventy-two million acres of corn and only forty-seven million head of cattle—almost two acres for each animal—and in large sections of the country from one half to two thirds of the available food value of the corn crop was wasted and the loss in the aggregate amounted to forty-five per cent of the stalk and ear together. It is demonstrable that this might have been saved. If you know of any other business that can throw away forty-five per cent

of its manufactured product and long survive, you are better posted than I am.

The silo made its first appearance in 1878-9 — there has been a little discussion as to just when and where — but it found its first practical application to any extent worthy of notice in 1880. Its growth was tremendous and the most extravagant claims were made for it. But soon there was failure all along the line. Since then the whole thing, from the foundation up, has been materially modified. American grit would not give it up. Yankee pluck stuck to that idea of the silo, declared that there was something in it if the thing could only be mastered. Thanks to this persistent spirit, the silo has now become one of the great factors of American industry.

One way in which it has made farming more profitable is this, it gives 365 days of summer on the farm, and so does away with "woodchuck" farming, which means gathering together all you can by the hardest work in the summer, consuming it in the winter, and coming out spring poor, only to do the same thing right over again. The American farmer must have 365 days of profitable income, 365 days of summer weather. With the silo and a comfortable barn, December may be "as pleasant as May."

There was a great deal of false teaching and many blunders at first. One was that we must raise an enormous crop of stuff to the acre. That was the very thing that defeated us. As high as four bushels of shelled corn were used to the acre for seed, and fertilizers were piled on to match! This resulted in tons of sour-crust, and nothing else. But it taught us something about the true principles of growing corn for ensilage, after all; that it needed air and sunshine; that its main nutriment came down from above and was not pumped up from below. We found that we could not grow succulent stalks in the shade, that room was needed for the development of life forces. And so from four bushels we came down to two bushels, to one, to half a bushel, and at length to eight quarts. Then we began to get satisfactory results.

Another thing we had to learn was, that a man could not tear his corn up by the roots and get a good crop so as to have it ready for the silo when the silo was ready to be filled; and that if he cut off the roots of the plants he retarded the growth just as long as it took to put out a new set of roots. That is how it worked out in Ohio, and I suppose it was the same in New Hampshire, for "corn is corn" the world over. We had to learn to stop fooling with nature's design and to let the roots of the growing plants alone.

Then we had to learn another thing — that corn, crowded so it could not develop ears, had very little value as food. Its purpose in life is to develop ears, it has nothing else to live for. A stalk of corn without an ear is an old bachelor, and not of much account anyway!

Still another thing we had to learn — that a great, big stalk of corn which represented a mass of coarse, woody fibre was as much out of order as the sickly and sour stuff that came from four bushels of seed to the acre. In other words, that quality amounts to something as well as quantity.

Again, it makes a tremendous difference whether corn is cut when it is just fairly turned into the glazed condition, or a month earlier. [Some related experiments (not reportable) brought out this fact very clearly and showed that the food value of a crop cut thirty days after first tasseling is nearly three times as much as if cut in the tasseling stage.] In this the chemists and Old Brindle agree, but when they don't agree let us take Old Brin's word for it every time.

We now come to the construction of the silo. Here, too, we were away off at first — and the majority of farmers are not overburdened with information now. Out in Ohio we thought we must have a big cellar or pit with a stone floor and extra thick walls to keep the stuff from freezing. We had the idea that a silo, to be good for anything, must be an expensive affair, costing fifteen hundred dollars or so, for two hundred tons; that it must be built out of stone, and made air and water proof. But the fact is there is nothing except a sieve that will let water through much quicker than Ohio

sandstone. But after awhile silos began to be constructed of wood, and I venture to say that out of the thousands of silos built last year not three were made of stone.

But how and where shall the silo be built? Put your silo in the barn if it is possible to spare the room, and when you consider how wonderfully it economizes storage — how you can get several times as much into it as into an equal space dry, and still have the greater part of your barn left, you will decide to grant room for it. [The description of how to build the silo was given with a large number of references to several diagrams, and even if it were reported verbatim would be unintelligible without the illustrations; but it is possible to make a brief summary that will convey the leading ideas.]

Supposing that a bent of the barn is chosen for the site of the silo, how shall we manage for a floor? Dig down to hardpan or gravel, making the centre eighteen inches below the sides, which will give you a kettle-shaped bottom. If the bottom is clay, tramp it hard and that will finish this part of the job. If it is porous or gravelly, cover with water-lime cement. For the sides, two by four joists two feet apart and well secured will be strong enough, because the kettle-shaped bottom, if the ensilage is “shingled” in layers, will cause the pressure to tend strongly toward the centre and away from the sides. For the outside walls use boards, double thickness, lapped, with tarred paper between; and for the inside, single thickness, matched. Fill the air spaces between with tan bark, sawdust, or some other good, non-conducting material. “You will want a door,” said the speaker. “Formerly silos were built without doors. I used to tell my hired man that it was just a pleasant change from hard work, a bit of agreeable recreation, to climb over into the silo, along towards spring, and pitch half a ton or so up over the ten-foot wall — but I lied like thunder!” The door shown on the diagram had two sections, or rather there was an upper and a lower door, separated by a space a foot or so wide. These doors, of course, are made double, on the same principle as the walls, and are frost and air tight. When the ensilage is put

in it is carefully "shingled" with the ends toward the front side of the silo. Once it was thought that the ensilage must be heavily weighted, but if it is carefully placed in thin layers and trodden down, with sometimes a thin sprinkling of hay between, it will be sufficiently air tight, and instead of a foot or so of rotten stuff on top, there will be a very thin but impervious coating of mould, protecting the contents when the silo is first opened. Instead of using a knife, involving much hard work and leaving a blank wall exposed to mildew, open the upper door, knock off the top board of the same side, and with a rake you can easily draw the ensilage out. It is all down-grade work.

It is a good plan to have the silos painted with coal-gas tar; but please don't get the common commercial tar made from crude petroleum, such as the Standard Oil Company, after they have run their material through every other process, manufacture into tutti frutti chewing gum! But, if possible, go to some gas-works, or make sure in some way to get coal tar. And when you are applying it to the walls of your silo, be reasonably careful how you conduct yourself up there, or down you will come with the hot tar on top of you. That was the way I got an idea how it feels to be tarred and feathered. Instead of taking a great quantity at a time, take two or three quarts only, and put it on just as fast as you can with a whitewash brush. Our silo has been painted four times with gas tar, and it is a solid thick mass on the walls.

The speaker described another form of silo quite common among the farmers of the West—circular in shape. They set up scantling and take half-inch boards and bend around them; over this they put a layer of tarred paper, then another layer of boards, and the silo is done.

What should it cost the average farmer to put up a silo? We used to think a thousand dollars was little enough, but with lumber at present prices one can be put up for sixty dollars that will hold a hundred tons, and give just as good results. It is simply a matter of getting something that will keep that ensilage as nearly perfect as possible. The cheaper you can get that result the better.

Mr. Gould next gave the results of his experience in harvesting the corn for the silo. Had tried various labor-saving appliances and patent rights, but had finally come back to the corn knife, each man cutting three rows at a time and deftly piling it in the most convenient way for loading. Formerly employed quite an array of help and machinery, but had simplified matters greatly. Keep an account of expenses per day and per ton.

QUESTION: Do you reckon your own time?

ANSWER: Yes, sir; at a dollar a day, and my wife says it is the most outrageous charge for labor she ever knew of.

Quite a number of questions were asked and answered, some of them by reference to the diagrams, and others not having a direct bearing upon the topic under consideration.

It would be impossible even in a verbatim report to express the marked individuality and inimitable manner of "John Gould of Ohio," one of the most thoroughly original and well informed silo men in the United States.

CREAMERIES.

BY PROF. JAMES CHEESEMAN.

He first showed a sample test of milk and explained how important it is that a correct sample should be taken. Ladies are especially adapted to the use of the Babcock tester, and are being employed for this purpose. There is no test now of quality for butter fat, but we are working toward that, and in all probability in a few years the quality as well as the quantity of the butter fat will have to be considered in making dividends. Variation of quality is due to breed and feed, and may be due to the individuality of the cow. These meetings are designed to aid those in the midst of whom they are held, by bringing to them and exchanging with them the knowledge and experience of others at a distance and from other States, for what the locality may contribute in return. The speaker takes off his hat to the private dairy, which makes the most and the best butter consumed. Flavor is a

very important point in butter. This is largely determined by what transpires in the stable. Feed, water, cleanliness, and climate have much to do with the flavor of butter, and there are variations in localities. Not only do cows turn a better and larger amount of butter when well fed and nourished, but even the well nourished and thrifty vegetable contains more nutrition to a given weight. It is the same with dairy products from well nourished cows. The New England dairymen have achieved success and notoriety as good butter makers because of their wise discrimination in selecting dairy herds and caring for them. Why should not every farmer plant annually more corn to feed his herd? This in conjunction with clover makes a good food for butter production and a good dairy crop.

A careful estimate made by Mr. Baker of the cost of growing an acre of oats puts it at twenty-one cents a bushel, allowing nine dollars for the value of the oat straw as fodder. Well grown clover, peas, and oats make a good combination for butter cows. It is more economical to buy cotton-seed and linseed and grow other feeds. Peas and oats are best grown by plowing in the oats three to four inches deep, then sowing the oats and harrowing them in. Clover should be the central feature of the rotation in producing more nitrogenous foods. There is no north, south, east, or west in dairying. It is a matter of judgment, selection of cows and conformity to condition. The question of choice of making creamery or private dairy butter is one for each dairyman to decide for himself. Local conditions and individual circumstances must determine in each case. There must be an observance of cleanliness.

The system of traveling instruction in cheese-making, which was introduced into Canada by Prof. L. B. Arnold, has now been introduced into Wisconsin and New York, and we need just such a system of inspection and instruction in all our creameries. The speaker next referred to some of the difficulties of running separators, which, if not obviated, lead to great waste. Great care and judgment are required to get

the cream lost down to the lowest per cent. By the gravity process there is much less loss of fat in dairy herds that give milk containing large butter globules.

WOMAN'S WORK IN THE DAIRY—PAST, PRESENT, AND FUTURE.

BY MRS. JAMES M. CONNOR, OF HOPKINTON.

In presenting this subject to you, I very much regret the insufficient time given me to prepare a paper for this occasion, as well as my own inexperience as a dairy woman. As the wife of a tolerably successful dairyman leads me to be interested in woman's work, and trusting to your patience as listeners, I offer these thoughts.

It is natural to suppose that butter was known at a very early date, for the "Good Book" tells us that "the churning of milk bringeth forth butter."

History also tells us, that the wandering tribes were accustomed to take on their journeys a supply of milk in skins, and butter would be formed by the agitation in traveling, and this suggested the first rude and simple process of churning.

In the time of Christ, butter was used chiefly as an ointment; even at the present time, in warm latitudes in Southern Europe, its use is comparatively limited.

It is still made in many parts of South America, by putting cream into gourds, or skin bags, and slinging them across a donkey's back and making the donkey trot around until the cream is churned.

In Buenos Ayres, a goat skin bag full of cream is tied to one end of a long leather rope called a lasso, and the other end to the saddle of a horseman, who rides at full gallop, with the bag bumping and jumping on the ground behind him until the butter is formed.

It was one of my childish delights to hear stories of the times when my grandmother was a young girl. The women in those days rode horseback, everywhere, oftentimes riding

miles through dense forests, the only road being a bridle path marked in the worst places by spotted trees, carrying a bag of corn on the horse's shoulders in front of the rider, and another bag of rye behind, to the gristmill, to be ground into meal for bread. It would have been considered folly to feed that corn meal to the cows.

My first recollection of a real dairy room was when I visited the old homestead of my grandparents. A "lean-to" or shed had been built on the north side of the house, where in the summer time the milk was carried and kept, and the butter and cheese were made. The old well, with its sweep and bucket for drawing the water, was near the door. Everything seemed so beautiful, as I stood by the window watching with childish wonderment those women making their butter and cheese. That dairy room, it seemed to me, was the sweetest and whitest place I ever saw.

In the olden time it was the custom for the women folks to do the milking. It was considered a part of the woman's work, and a girl who did not know how to milk was thought to be shiftless or good for nothing. The churning was also the woman's work.

The oldest form of churn was the upright plunge or dash churn. It was made like a tall wooden bucket, with staves smaller at the top and bound with wooden hoops.

The dash was a long, round stick, like a broom handle, with two pieces of wood nailed or pinned with wooden pins crosswise on to one end. This was worked up and down through the cream until the butter came into one solid mass.

Thermometers were unknown, and the index finger of the dairy woman tested the warmth of the cream before it was put into the churn.

In the days of superstition, when witches were riding about on broomsticks, sometimes the butter would not come. After hours of persistent churning, the good house mother would solemnly say, "the cream is bewitched."

A horseshoe was heated in the fire and carefully dropped into the churn; very soon her witchship would find the churn

too hot for her comfort and betaking herself to her broomstick the butter would come.

In these early days the dairy woman's utensils were few and of the most primitive construction, wooden bowls, trays, and plates, or "trenchers," as they were then called.

In the more wealthy families, there were pewter dishes, but these were oftener arranged on the dressers for ornament than for ordinary use. After a time our ancestors had more resources for improvement. Potteries were built, then earthen pans and crocks were made. These were very heavy, requiring almost the strength of a man to lift them from shelf to table for skimming the cream and cleaning the pans. They must not be scalded with boiling water, because they might be fractured, and so become useless. This earthenware was used for a long time. Then tinware was introduced. Then such an array of brightness as came into the dairy room! Every sunshiny day these pans must be carefully washed, scalded, and dried, then carried out of doors and arranged in all their shining glory on a board, placed in position for that special purpose, to be purified by sunshine and fresh air.

In all these years, during the hot summer months, the housewife made her cheese for the home use, and for her husband to carry to market in the fall with other products of the farm.

Cheese-making on the farm will in a few years become one of the "lost arts." But few if any of the wives and daughters of farmers will know how to make cheese, any more than most of them know how to spin or knit at the present time.

Following the shallow tin pan, came the large iron pan; then the deep-setting methods, in various forms, came into use. With the separator and extractor of more recent date, which would seem almost the climax of perfection, we are yet prepared for still greater wonders. No doubt in the near future these will be reduced in their proportions and cost and come into general use in the private dairy. Such are some of the wonderful advancements in dairy work within a short period.

Gradual and great improvements have been made in the utensils and machinery used in the dairy room, by which woman's labor has been made easier and more attractive, and the result is a better article for the home and for the market. Every improvement made in labor-saving implements means one step higher. There is more time for improving the mind, more time for recreation, and more sociability among the farming community.

Notwithstanding woman's release, in a measure, from the drudgery and labors of the olden time, from some of the labors of more recent years, and the still greater release that is coming to her in the future, the wife of the dairyman should not lose one iota of her interest in dairy work. She should be interested in all the methods and everything that tends to improve and advance this industry.

Woman is more thorough in all the little details of dairy work. Her natural love for dainty surroundings causes her to see the propriety of having every utensil in her dairy room and the room itself arranged and kept with the utmost neatness and care, that every pound of butter she and her husband manufacture may be of the best.

Her keen perceptions and her more refined taste will always be an important aid in the work of reform. Woman, with her innate love of the beautiful and her love for her home, is better fitted to detect imperfections in the home than man.

Who should be more interested than the woman in the production of pure, clean, wholesome butter? Her delicate taste has not been defiled or blunted by the use of tobacco or liquor, and she detects more quickly the fraudulent article; and we would suggest to the association, in view of the fact of woman's more delicate taste, that the wives of those contesting for prizes should be selected as judges, each being entitled to one vote.

It has always been said that a woman's curiosity overcomes all thought of prudence in whatever she desires to know; and it may be that, being one of the judges on these exhibits, she will be curious enough about her neighbors' affairs to attend

these dairy meetings, thereby gaining some hints that will be of use to her in her own dairy work. Ambition to do our very best in every station of life is a laudable one; and if we excel in our work we have advanced one step.

The first principles of butter-making are just the same now as in the days of Solomon, unchangeable as the laws given to Moses upon Mount Sinai. But God has also given us brains—the desire to study, to invent all kinds of machinery, and to learn and improve in every minute detail of life.

The mystery of life in all its forms will ever remain a mystery; no invention of man will ever solve it satisfactorily. If we neglect the opportunities given us for improving our minds, that we may in a measure perfect these first principles given us, we bury the one talent or the five, as the case may be, and so by neglect make ourselves unprofitable servants. My friends, is it right for us to bring that sentence of justice upon ourselves?

J. L. GERRISH,

Secretary.

NEW HAMPSHIRE STATE GRANGE.

OFFICERS FOR 1892.

NAHUM J. BACHELDER, <i>Master</i>	.	.	East Andover.
JAMES E. SHEPARD, <i>Overseer</i>	.	.	New London.
EDWARD J. BURNHAM, <i>Lecturer</i>	.	.	Manchester.
ELLERY E. RUGG, <i>Steward</i>	.	.	Keene.
HOWARD B. HOLMAN, <i>Assistant Steward</i>	.	.	East Tilton.
GEORGE W. PATTEN, <i>Chaplain</i>	.	.	Dublin.
JONATHAN M. TAYLOR, <i>Treasurer</i>	.	.	Sanbornton.
EMRI C. HUTCHINSON, <i>Secretary</i>	.	.	Milford.
ADAM DICKEY, <i>Gate Keeper</i>	.	.	Manchester.
Mrs. NAHUM J. BACHELDER, <i>Ceres</i>	.	.	East Andover.
Mrs. GEO. J. BENNETT, <i>Pomona</i>	.	.	Westmoreland.
Mrs. ALONZO TOWLE, <i>Flora</i>	.	.	Freedom.
Mrs. EMRI C. HUTCHINSON, <i>Lady Steward</i>	.	.	Milford.

EXECUTIVE COMMITTEE.

NAHUM J. BACHELDER, <i>Chairman</i>	East Andover,	} <i>Members</i> } <i>ex officio</i> .
EMRI C. HUTCHINSON	Milford,	
DANIEL W. RUGG	East Sullivan.	
CHARLES MCDANIEL, <i>Secretary</i>	West Springfield.	
JOHN M. CARR	Wilmot Flat.	

GENERAL DEPUTY.

ALONZO TOWLE	Freedom.
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SECRETARY'S REPORT.

The eighteenth annual session of the New Hampshire State Grange was held at City Hall, Manchester, December 15, 16, and 17, 1891, and was the largest and most enthusiastic meeting yet held by the organization. The meeting was called to order at 11 o'clock A. M., by Master Charles McDaniel, with the remaining officers all present and at their respective stations. The first business after the ritualistic service of opening the meeting was the conferring of the fifth degree upon thirty-seven members who were entitled to receive it. This was followed by the appointment of the committee on credentials, consisting of E. C. Hutchinson, Milford; E. E. Rugg, Keene; J. W. Fitch, Cornish; Mrs. C. H. Pettee, Hanover; Mrs. D. H. Tufts, Strafford. After consultation the committee submitted a report announcing the presence of all the officers and 184 credited delegates. There was also present a large number of members of the order from various sections of the State. After the reading of the report in detail, the Grange took recess until 1.30 o'clock P. M.

AFTERNOON SESSION.

After the formal opening of the afternoon session and the preliminary exercises attending, Master McDaniel delivered the following annual address.

ANNUAL ADDRESS.

BY CHARLES MCDANIEL.

Members of New Hampshire Grange, Brother and Sister Patrons:

We are again assembled to deliberate upon the ways and means within our reach to advance our interests in moral, social, economic, and intellectual relations; to recapitulate the work of the Order of Patrons of Husbandry for the past year, and perhaps, for the past twenty years.

At home, in our State, we have many reasons to be proud of the success that has crowned the efforts of its members. For seventeen years the farmers in New Hampshire have had an organization which, though small at its origin, has grown to be a power that is felt throughout the length and breadth of our Granite State. From the organization of Grange No. 1 to Grange No. 165, there has been one object continually in view, namely, to educate the farmers and to develop a higher manhood and womanhood among our members.

WORK ACCOMPLISHED.

By the aid of our forces at our last session of the Legislature, we were enabled to organize a farmers' council, that formed the basis for aggressive work and secured the passage of laws in the interest of agriculture, and kept within proper limits the expenditures of state money for such purposes.

We might cite the cattle commission, which will doubtless save the State more than fifty per cent of expenses for like purposes, which is proving to be more efficient and is having a tendency to eradicate tuberculosis from our State more effectually than any former statute; the pure food bill, in the interest of both producer and consumer; the act to prevent the destruction of sheep, and other damages by dogs; the acceptance of the Thompson bequest, and the bill providing for the removal of the New Hampshire College of Agriculture from Hanover to Durham, and the passage of the Australian ballot law, that we, in this State, so long advocated as a Grange.

The past year has given us a satisfactory numerical gain in membership, while the quality has been unexceptionably desirable—more and better work having been done than ever before. In the home work, which looks to home industries, the benefit to the individual Patron is of more importance than coming together on state occasions and listening to studied addresses or impracticable resolutions. Let us continue to improve our home industries, and make the results of our work “a present help.”

During the past five years we have substantially doubled our membership from 5,000 to 10,000 in round numbers, and more than doubled the number of Pomona Granges.

The Grange Fair Association has continued to improve, advance, and prosper during its whole existence as no other fair has ever done during a similar period.

The Grange Mutual Fire Insurance Company has proved to be a godsend to the Patrons of New Hampshire in a financial way. Every one who has had \$1,000 or more insured in this company has saved enough to more than pay his dues for the past three years. The Patrons' Relief Association has been in careful hands, the assessments few, the benefits sure, and a present help in time of need.

THE NATIONAL GRANGE,

which held its last annual session in Springfield, Ohio, deemed it wise and proper to recommend the members throughout the country to celebrate its twenty-fifth anniversary, or silver wedding, upon the 4th of December, 1891, or at a regular meeting held near that date. If any Grange in this State has not had a meeting specially devoted to this celebration, we most earnestly recommend that it do so at their earliest convenience. Let the sentiments that were promulgated from the special committee of the National Grange entitled Proclamation, Greeting, containing at least the essence of the work of the Grange for the past twenty-five years, be so often read that they will become household words to every true Patron.

While we celebrate this anniversary with music, joy, and brotherly love, and while we take pride in the noble work already done, let us not be content with past work; but put into active operation, plans and purposes for the future, so that when our golden wedding anniversary shall come, we may then—for we hope to be still working in the Grange—be able to show more progress than in the past quarter of a century. Let us look after the details, remembering that a conservative course is far better than visionary speculations.

While we believe organization among farmers is a necessity, we also believe that they should keep their organization thoroughly identified with agriculture and agricultural interests. Those interested in agriculture "who have generous hearts and open hands" are the ones wanted. Our Grange continues to be the leading organization, and has done more to advance the social, moral, and intellectual condition of our farmers than any other element in our country. Wherever a live Grange exists, it has many advantages that are best known and realized by the individual members. Not these alone as our purposes briefly stated, but the economic and political situation of farmers demand organization.

The great financial questions of government, from town, county, and state, to nation, are of vital importance to the farmers; while we are left free to act as our own judgment shall dictate on political, economic, and religious questions, we, as an organization, are bound to abide by our constitution, laws, rules, and usages, and the decision of the National Grange is final and obligatory upon its members. That we may properly discuss all economic and political questions in their direct bearing upon agriculture is entirely within the province of the Grange, and a majority may indorse any theory or resolution involving questions of finances or tariff, but in no case is any member allowed to present partisan politics or bind membership to any political party or scheme.

LOCAL TAXATION.

Complaints have been heard during the past year, with increased earnestness, from our agriculturists from all over these United States. The question has been considered in the various States from their respective standpoints, and in some States radical changes have been made, and in a few instances to the detriment of the farmer, especially of those who were doing business upon borrowed capital. For the past two years or more, our people have discussed the subject pro and con, and thus far without any definite plan perfected whereby our state laws could be amended. At our last Leg-

islature several bills were introduced and referred to the judiciary committee, composed of men of the legal profession — farmers, who were most interested in the reform, were not represented on that committee — and these bills were all deemed impracticable, and those who introduced them considered it wise to withdraw. Still there is an injustice, if not in our laws, in the execution thereof, as has been repeatedly shown. Now, Patrons, let us proceed to business on this line during the coming year, consider well the question, mature the plan for relief; then with a united force and a majority of farmers, or of those who will work for equal rights, secure such laws as will relieve us and put the burden of taxation where it justly belongs, namely, upon the real owners of the whole property of the State subject to taxation.

COLLEGE OF AGRICULTURE AND EXPERIMENT STATION.

A report will be given in detail of the condition of these educational institutions that are ours by right, and as such we must patronize them and assist in making them the pride of our nation. I have already alluded to legislation in regard to these institutions, but nothing has been done by the proposed removal of these institutions from Hanover to Durham, that should in the least detract from their usefulness in their present location. The work is well arranged with an ample corps of teachers and a good supply of apparatus at hand, for the present needs. Young ladies have been admitted during the past year and the work arranged accordingly.

Co-education in school and college, as well as in Grange, is in perfect keeping with the principle laid down in our organic law. It is quite as necessary that our girls have a practical and scientific training as our boys, especially those of similar tastes and desires for rural life, who are intending to make agriculture their life work. It is in these schools that theory and practice go together, as they should in all industrial education. Patrons, it is largely with us to make these institutions popular, and to be appreciated they must be patronized. I would once more urge upon farmers their duty to visit the

College and Experiment Station, and if any improvements appear to them needful, to become acquainted with the faculty, and personally present their views. The faculty are the servants of the Patrons, and a closer intimacy should exist between them. Rally for our Agricultural College.

FREE MAIL DELIVERY AND COLLECTIONS.

Farmers are demanding free delivery of mail in the most thickly settled portions of our rural districts, with postal boxes at junction points along the line. Such a plan seems to be feasible, proper, and just. It has been demonstrated by trials of the plan in several sections of the country that increase of mail on those lines, nearly or quite paid the extra expense. In order to keep posted on the current events of the day, many of us are obliged to go from one to three miles daily for our mail, and a free delivery would enable us to have the daily papers, so very desirable, especially to the progressive farmers. We, the farmers, are allowed or rather compelled, to pay our full share of all government expenses, and should receive equal benefits with those in cities and large villages, especially in the delivery of our mail. In our large towns, street cars take the people to the post-office for the small pittance of five cents. In a large share of our agricultural districts, it costs the farmer fifty cents per day to get his mail, only regular prices for his team and driver. Let us then urge the matter upon our government.

WEATHER BUREAU.

The chief of the weather bureau is desirous of extending the usefulness of the service in giving a wider dissemination of cold waves and frost warnings to agricultural centres, as well as sending weather forecasts to points in each State that are desirous of having the practicability of the service tested. I am informed that those in charge of the New England service wish to become more closely connected with the farmers or in closer communication with them in this work. The New England Meteorological Society at Cambridge has

charge of the state weather services for all New England, such as collecting and tabling data, issuing weekly and monthly bulletins which show the results of the weather upon the crops, whether beneficial or injurious. Employés of this business are instructed to coöperate with our Patrons and farmers in this work. We recommend that our Pomona Granges secure the services of an expert from the society to meet with them and discuss the means used and its bearing upon our crops and business. Thirty-five of our States have established a state weather bureau service, and why should not New Hampshire, the Switzerland of America, have similar benefits? Let us improve the opportunities that are spread before us in this direction.

POMONA GRANGES.

In addition to nine Subordinate Granges organized during the past year and a net gain in membership of 1,032, we have added Carroll County, No. 8, and Sullivan County, No. 9, to the list of our Pomona Granges. Patrons have become aware of the fact that the isolation of a Subordinate Grange is not conducive to the highest development of our social, moral, and intellectual natures, but that in meeting together in different sections of our several counties, we develop and direct to greater usefulness the latent powers of our members. At our annual field meetings, the public is reached and the routine of the farmer's life is broken into by a pleasant and profitable day of fraternal greetings. Our aims and objects are there made known and an enthusiasm aroused by an interchange of thought in regard to the political and beneficial work of the Order, in its various parts, that go to make up the whole duty of man to himself, to his neighbor, and to his God.

GRANGE PRESS.

The local or state paper that does not at the present time have a good word for the Grange is an exception to the general rule. But upon these papers which are controlled by men having our welfare in view, must we depend for the

strengthening of the Order; and we should support the papers that are ready and willing to champion our cause, whether they are local, state, or national, in their character. The Grange is of itself an educator, and efforts made by the press to impart practical knowledge to those who are tillers of the soil, and who will doubtless soon take charge of the affairs of state and nation, will be duly recognized and appreciated. Let us keep industrial education at the front, and not put our light under a bushel. Give the press our essays and discussions, and they in turn will condense and publish for the benefit of agricultural communities.

FINANCIAL.

The financial condition of the National Grange was never in a healthier condition. Receipts exceed expenditures in our own State Grange treasury as well as in the National Grange treasury. Better and more effective work is reported in a large majority of States where the Grange has a foothold. No direct financial schemes are dictated by this State Grange, leaving any special financial work to the respective Pomona or Subordinate Granges, as each locality has its own particular surroundings to develop.

WOMAN'S WORK.

Woman's work in the Grange, National, State, County, and Subordinate, is one of the powerful agencies in promoting the moral, social, and literary features of all our meetings, whether public or private. The committee on Woman's Work in the National Grange reports material progress in many directions, in some States as temperance and suffrage workers; in others, they have been instrumental in securing funds to build Grange halls; while in all they hold positions of trust and honor as officers in their respective Granges. I trust a special committee will be appointed at this session to advance their work.

DEPUTY INSPECTION.

This work has been well done during the past year by competent brothers who were thoroughly alive to the importance

of the work. Special instruction was given to the deputies during the early part of the year that we might have uniformity of work throughout the State. In addition to this work we call the attention of masters to their duty in reporting semi-annually to the master of the State Grange the progress of their work. At the last session of the National Grange a resolution or recommendation was adopted, requiring lecturers of Subordinate Granges to report semi-annually to the lecturers of State Granges, so that work should be more unified. Masters and lecturers for 1892 will please bear in mind these requirements.

GRANGE TEMPLE.

The National Grange in 1890 adopted a resolution in favor of building a temple to Ceres, which was referred to the executive committee with power to act. Further action was taken in regard to the same project in 1891, but the name was changed to "Grange Temple of Agriculture," which is to be a permanent home for the National Grange. The purpose is to use \$20,000 of the permanent fund of the National Grange, when \$30,000 or more shall be secured from individual members, Subordinate, Pomona, and State Granges, supplemented by donations from any who are not members of the Order. All money is to be sent to John Trimble, Secretary National Grange, 514 F street, Washington, D. C.

This subject was last year referred to our state executive committee. The plan adopted by the National Grange executive committee was by the sale of "bricks." This State will undoubtedly be ready to do its full share of the work. Here is an opportunity for any of our wealthy farmers, lawyers, bankers, railroad men, and capitalists, or any others who are interested in agriculture, to show their interest by donations for this national purpose. Such a home is desirable and would be a good investment should the building be properly located and built in Washington, D. C. I recommend that all money donated for this purpose be paid to the secretary of our State Grange, and by him sent monthly to the sec-

retary of the National Grange, each giving proper receipts therefor.

MORTALITY.

It has been our custom in former years to devote an hour during the session in which to pay a tribute of respect to those who have been voting members or officers of this State Grange, and who, during the past year, have gone to their long home from whose bourne no traveler returns. Let those present, who were intimately acquainted with our departed brothers and sisters, present a brief and condensed review of their past lives. We extend to the immediate families of past members of this body, our warmest sympathy, trusting that what is our present loss is their eternal gain. The following is a list as far as known to us:

Brother George D. Pollard, past master of Greenfield Grange, No. 23.

Brother William F. Kittredge, past master of Thornton Grange, No. 31, died February 19, 1891.

Brother George W. Leighton, past master of Cold River Grange, No. 19, died March 5, 1891.

Sister Margie L. Pattee, wife of Past Master George F. Pattee of Oak Hill Grange, No. 32, died May 8, 1891.

Sister Hattie A. Melvin, wife of Past Master Frank O. Melvin of Bradford Grange, No. 58, died July 5, 1891.

Brother William W. Flanders, past master of Kearsarge Grange, No. 37, died August 20, 1891.

Sister Mary A. Wheeler, wife of Past Master E. T. Wheeler, of Hollis Grange, No. 12, died September 4, 1891.

Brother John Rogers, past master of Bradford Grange, died September 5, 1891.

Sister M. Lizzie Hamblett, wife of Past Master Orren A. Hamblett, of Fruitdale Grange, No. 106, died October 9, 1891.

Brother George H. Wiggin, past master of Narragansett Grange, No. 46, died October 26, 1891.

Brother John Badger Clarke, past master of Amoskeag Grange, No. 3, died October 29, 1891.

Brother David Sarrett, master of Greenfield Grange, No. 23.

Brother Isaac Story, past master Union Grange, No. 56, Hopkinton.

CONCLUSION.

And now, sisters and brothers, I desire to congratulate you upon the bright future for agriculture in New Hampshire. Let us endeavor to duly appreciate the improvements that are constantly being made to relieve former hardships, and strive to make our future more pleasant and profitable than the past.

I again desire to express my sincere thanks to the officers and members of this State Grange, and to the whole rank and file of our Subordinate Granges for their earnest support and coöperation during the past five years that I have had the honor and pleasure of filling the master's chair. The noble work we have accomplished as Patrons is very largely due to your efforts, and to those, whom you, that are present as delegates, represent.

I have every reason to hope and believe that we have a bright future before us and that continued prosperity will crown the efforts of our Order. In closing my work as your presiding officer, which position was wholly unlooked for by me, I most earnestly ask that the same loyalty and unanimous support will be accorded to my successors as has been given to me. The work of the session is now committed to your hands. May all subjects presented be duly considered, and may each and every member of this meeting perform every duty assigned them, and with charity for those outside our gates, let us hope for an abundant harvest.

CHARLES McDANIEL,
Master State Grange.

Hon. J. D. Lyman, lecturer, made the following report :

REPORT OF LECTURER.

Worthy Master :

How inspiring to the soul of the true Patron, especially to those of us who planted the Grange in this State, when the

governor and orator at agricultural fairs warned farmers not to join it, and our "Four Hundred" discountenanced it, is this grand assemblage.

It is a sure prophecy of increased knowledge, of larger crops, of happier homes, of fuller pockets, of better schools, of more prosperous churches, of more loving and therefore more helpful and happier neighbors.

What a representative body this is! Here are the gray-headed and thoughtful; the dark-haired and vigorous; and the fair locks of youth. Here, not only the farmer, but the family—that fundamental institution of all civilization—is represented by the father and the mother, brother and sister, who give to "home, sweet home" a quartet of heaven-born music.

Thus, this grand representation of the people gather in this "Queen City," where the waters leap down and the buildings spring up; where the mighty Merrimack is a kidnapped and fettered slave that citizens may be more free, for poverty is slavery; so here the river is dammed to bless the people. Here we greet each other; here we review; here we find our condition; here we report progress and plan future campaigns.

My strictly official duties for the year have included about the usual amount of lecturing and writing. At their first meeting last year, your committee voted against accepting the Thompson legacy, but upon re-arguing the question, reported in favor of its acceptance, and the State Grange resolved in its favor and I report our success in carrying out that resolution at the capital. Before the Legislature assembled, Judge Foster and Hon. J. G. Hall, attorneys for the executors, solicited me to accept the chairmanship of a special committee to take charge of this subject in the House of Representatives, and I was appointed by the speaker. A committee of the Board of Agriculture also reported in favor of accepting the will. I expected difficult legal questions to arise; that there would be great diversity of opinion, as there must generally be, when new measures are considered by

earnest and honest men; and I expected great difficulties would present themselves in drawing a bill so that the executors would feel safe in paying over this great sum of more than four hundred thousand dollars, for if the conditions of the lengthy and exacting will were not in every particular complied with by them, the wealthy Chicago heirs might claim the property at the hands of the executors, although they might have previously passed it over to the State, and if the State should fail to comply with all the required conditions after receiving it, the heirs might claim it back from the State.

If I know myself, I should rather have lost my life, than to have had the farmers lose this magnificent legacy of my old friend Thompson, through any mistake of mine. Hon. James F. Joy, one of the most distinguished and wealthiest of the Western lawyers, and the active executor of the will, the other being sick, though some eighty years of age, journeyed twice in mid-winter from Detroit to Concord to assist in perfecting the bill which was finally agreed upon unanimously in committee, and passed both branches of the Legislature, and was approved by the Governor.

After this and as a logical sequence, provisions had to be made, and the proper legislation had, to remove the New Hampshire College of Agriculture and the Mechanic Arts and the Experimental Station from Hanover to Durham, and to dispose of the property at Hanover, and procure in addition to those sales a hundred thousand dollars to build suitable College, Experimental Station, and Farm Buildings at Durham, all of which it almost surprises me even now to be able to report was accomplished. I can scarcely believe it, yet it is a fact. This action of the Legislature in furnishing the funds for the buildings, caused some or all the opponents to accepting the Thompson legacy, to become its warm friends. The heirs, Mr. Frink, their Eastern attorney, went with me before the Court in Exeter, and gave up their case, thus withdrawing all objections to the executors paying this great legacy over to the State. The State received the property

months ago and holds it in trust for agricultural education. Mr. Joy, the executor, is a relative of the heirs, which led some to fear that his sympathies were against us, but he proved himself a friend and a gentleman of honor, and has since, in a letter, commended my action and declared that the executors would not have dared to pay over the funds if the amendments he proposed had not been made a part of the bill.

Worthy Master, brothers and sisters, I have never before, as lecturer of the State Grange, had the privilege of making a report of such vast importance to the progress of agriculture in our State as is this. I am more glad that I was a member of the Legislature at its last session than of any other, and this on account of the good which I fully believe I was able to help do for the farmers of our State, both at present and for the future. Had there never been a Grange in our State it would have been the height of folly to have attempted what we succeeded in accomplishing. As to other legislation, our worthy master was on the standing committee on Agriculture with me, as were other Patrons, and he and they well know that we were by no means bashful in asking legislation for the farmers and that every bill we reported but one, and that the least important, passed, and that would but for the strenuous opposition of a member claiming to be more of a farmer than anything else. The Patrons have great reason to remember the last session of the Legislature with gratitude for the favors it showed the farmers, be their judgment what it may as to its other doings. Never any other session came near doing as much for them.

The equalization of taxes is an important matter for future consideration. It must come, but how to accomplish it is an exceedingly difficult problem. Could our present laws be executed there would be much less injustice. I regret making my report so lengthy, but feel it my duty to call your attention to what we must insist that the agricultural school at Durham shall become; for we are in no small degree responsible for the institution and we, the Patrons, are bound in

honor to aid, assist, and support it. After 1910 it will have from eighty to one hundred thousand dollars to spend yearly. Our farmers ought to make this their great educational institution for such of their sons as are to be farmers and mechanics, and such of their daughters as are to keep house. Some old king is reported as saying that the youth ought to study what they are to practice during life. On this principle the common college curriculum of language and mathematics is proper for those who are to be lawyers and clergymen, for they are to use language and logic (mathematics is logic). On this same principle those who are to be farmers, mechanics, and housekeepers ought to study the arts and sciences pertaining to their respective occupations.

Let the boys here to make farmers be under the instruction of the best farmer that can be hired—the best orchardist; the best butter maker; the best cheese maker; the best breeder and feeder of neat stock; the best breeder, rearer, and trainer of horses; the best farrier; the best shepherd and swineherd; the best man to care for fowls; the best market gardener and grower of small fruits; the best forester and practical drainer of wet lands; and the girls be taught by the best cook, the best housekeeper, the best needle woman and maker of clothes, the best laundress, the best butter and cheese makers; also by one who knows how to buy all the articles which have to be bought for food, clothing, and furniture, for economy is one of the important lessons to be taught here.

Here all farm implements and new varieties of seeds and plants and fruits should be tested, and commercial fertilizers analyzed and experimented with so that farmers may know which to purchase and what they are buying. Here, also, while experiments are tried with the various methods of applying fertilizers and ways of cultivating the land and the rations to be fed to stock, the different breeds of stock should be tested. This school and farm should become the great reservoir from which farmers are to draw the information they desire by bulletins issued, by lectures by its professors, and by visits, and to which they shall resort for animals when they

wish to improve their stock, and for information as to farm implements and methods and seeds. One of our milkmen, recently, by means of the information contained in a circular from our Agricultural college, reduced the cost of keeping each of his cows one cent a day, and increased the milk of each, on an average, one pint per day. Could each farmer do this with his cows it would put about five hundred thousand dollars a year into the pockets of the farmers in this State. Philbrick, of the Board of Agriculture, reduced the cost of keeping his cows five cents per head a day, and increased the yield of milk. This rate would save our farmers a million dollars a year. The lamented Judge Roberts, a most successful farmer in Rollinsford, thought that the corn crop in this State would be increased 10 per cent if each one planted the best seed adapted to his farm. This would be a gain of about one hundred thousand dollars a year to our farmers. But time forbids my enumerating further on this line.

Fine animals of the best breeds should be kept here for the purpose of teaching the students how to breed, feed, and care for such stock and to know a good animal from a mean one; and they should also be kept for breeding purposes, and such as could be spared, sold for that purpose, so as to improve the farm stock in the State. This is of great importance. While the average New Hampshire cow is, I think, said to produce about 125 pounds of butter a year, some herds average 300 or more pounds to the cow, and there seems to be positive proof that a few cows have in a year produced more than their own weight in butter and were not light cows either.

Do you ask if a rightly conducted agricultural college will pay? Ask you if intelligence and knowledge pay in farming? As well ask if the intelligent farmers of New Hampshire are now growing more abundant crops than did the Indians! Ask how New England trebled her wheat crop per acre! Ask why the cows of the Zulus yield their owners only a pint of milk at a milking! Whence these differences? I answer knowledge, knowledge, nothing but knowledge. Truly, Bacon is correct, "knowledge is power."

Then be sure that the best school teachers and the best specialists in the useful science, be employed, so that this institution as a school, in the common acceptation of the term, shall be without a peer. Then our sons shall graduate therefrom superior farmers and well educated young men, and our daughters, accomplished young ladies and excellent housekeepers. How the blessing of such an institution bursts upon my vision. God grant that it may be realized.

JOHN D. LYMAN,
Lecturer.

Frank H. Weld, steward, made the following report:

REPORT OF STEWARD.

Worthy Master, Sister and Brother Patrons:

By command of the worthy master, I offer this brief report. It is required of stewards that they be faithful. The duties of the steward are laid down in a beautiful ritual of our grand Order. I have endeavored to watch with fidelity, during the year the position to which I was assigned.

We have enjoyed another year of prosperity in the old Granite State; we have again assembled in our annual meeting. We have left the bustle and turmoil of life's great battlefield, bidding farewell to its cares and anxieties, its toils and ambitions, that we may again come in peace to this, the "Queen City" of New Hampshire. We have come to work for the good of the Order.

Let this meeting be one that will make a lasting impression for good in this city and State; that we may feel that it was well for us that we came to this session of the State Grange. Let us, Worthy Master and Patrons, continue in well doing; follow out the lines of work and policy that are bringing us good returns, until every town in our State shall reward our labor with a live Subordinate Grange. Carry the light into dark places. Let us deserve success and continued success will surely come. And this means work and thought by

every member, not peaceful contentment with ourselves, expecting the Grange to accomplish in a go-as-you-please way, and drifting in every and all directions except the right one.

Your "Knight of the Spud," Worthy Master, is ready and willing to look after his portion of the field, and only asks that we will practice coöperation as well as preach it.

Fraternally submitted,

FRANK H. WELD,
Steward.

H. B. Holman, assistant steward, reported as follows:

REPORT OF ASSISTANT STEWARD.

Worthy Master, and Members of the State Grange:

If stewards should "be found faithful," their assistants should be no less so, and in the discharge of my duties as assistant steward of this Grange, I have endeavored to implicitly obey the commands of my worthy superior, as well as perform the other duties pertaining to the office, with fidelity. But the nature of these duties is such that they cannot so readily be itemized and presented in the form of a report as can the labors of some other officers.

But of our manual itself, I wish to say that the more I study its pages, the more I admire it. The better I become acquainted with the deep truths and principles that lie partially hidden beneath its surface, the more I am led to wonder how so much can be contained in so little. And I feel that the best suggestion I can make for the good of the Order at the present time is, that each brother and sister take our manual at least once a week and spend an hour in carefully studying one of its lessons; then, the next week, study another lesson, and so on, till all of its pages are as familiar as household words. Then we should be prepared to see the truth and beauty of all its teachings.

And I do not feel that I could rightfully claim to be faithful

in the discharge of my duty if I did not embrace the present opportunity to urge all officers of Subordinate Granges to thoroughly commit their part in the initiatory ceremony before attempting to initiate. If we have ever been spectators of the two methods, namely, reading and reciting the parts, we must have noticed a wide difference in the impressiveness and beauty of the ceremony. It is often remarked by candidates who belong to other orders, that our degree work would be indeed beautiful if the officers were only familiar with their parts. Of course it takes time and close application, but I fully believe that the officers themselves would be richly repaid for all their trouble in having such golden truths so firmly impressed on their own minds.

Patrons, the work which we are engaged in is not only a "glorious" work, but a great work. The Grange proposes to bring together the husbandmen from all over this fair land and unite them in one common brotherhood and bind them with a fraternal tie so strong that no event of life shall sever it. Then when this grand army shall with one united voice proclaim that henceforth no more tax shall be levied on agricultural property according to its cash value, than on other property, its proclamation will be heeded.

And when it shall discover the Wall-street corn broker, with his gloved hand, purloining the profits of both production and consumption, from the common treasury of the brotherhood, it shall have on hand a law that shall snatch him from his high position and lodge him in a cell beside the common thief. And so it may go on removing obstacle after obstacle from its pathway, until farming shall again pay as well as in the palmy days of our fathers, and the profession of agriculture stand as then, in the front rank.

But, brothers and sisters, such results can only be reached through unity of action; and I sincerely hope that every officer and member of this Grange will become so thoroughly imbued with the spirit of cooperative and fraternal feeling during our session, that they shall be to their constituents, a lamp to guide their feet in the right path through all the coming year.

H. B. HOLMAN,

Asst. Steward State Grange.

Hon. J. M. Taylor, treasurer, made a report showing the finances of the State Grange to be annually improving. The amount of cash on hand was reported to be increased from \$3,005.46 December 16, 1890, to \$3,821.31 December 15, 1891.

REPORT OF SECRETARY.

BY N. J. BACHELDER.

Worthy Master:

In accordance with constitutional requirement, we submit the annual report of your secretary. Granges report quarterly to this office, and the following report is for the year ending September 30, 1891.

During the year ending September 30, 1891, there have been nine Granges organized, as follows:

Merry Meeting, No. 155, Alton, Charles H. Downing, master.

Surry, No. 156, Surry, William H. Porter, master.

Trojan, No. 157, Troy, Henry M. Whittemore, master.

Mt. Israel, No. 158, Sandwich, B. F. Fellows, master.

Lincoln, No. 159, West Swanzey, Park E. Wright, master.

Carroll, No. 160, Ossipee, A. J. Hamm, master.

Jeremiah Smith, No. 161, Lee, B. Frank Davis, master.

Newfound Lake, No. 162, Bristol, Calvin Martin, master.

Hampstead, No. 163, Hampstead, John C. Sanborn, master.

Making 130 active Subordinate Granges, September 30, 1891, with a membership of 9,870.

The additions are from the following sources: By initiation — males, 644, females, 660; by dimits — males, 44 females, 35; by re-instatement — males, 38, females, 30; by charter members of new Granges — males and females, 250; making a total gain of 1,701.

The losses are: By suspension for non-payment of dues — males 177, females 163; by dimits — males 77, females 98; by

withdrawals — males 47, females 46; by death — males 40, females 31; making losses to the number of 679. This deducted from the total additions leaves a net gain of 1,022, and a total membership for the year ending September 30, 1891, of 9,870, as stated above.

Since September 30, two Granges have been organized:

Crescent Lake, No. 164, Barnstead, William H. Berry, master.

Chocorua, No. 165, Tamworth, Albert S. Pollard, master.

Making the present number of active Subordinate Granges, 132.

The charter membership of these two Granges add 60 to the number, and with the probable net gain in the Granges of the State since September 30, our present membership cannot be less than 10,000.

Amoskeag Grange, No. 141, Manchester, stands at the head of the Grange column with 265 members. There are also two other Granges with a membership of over 200 — Pembroke, No. 111, Pembroke, 237 members, and Grafton Star, No. 60, Hanover, 203 members. Other Granges with a membership of 100 or over are as follows:

Cheshire, No. 131, Keene, 179 members.

Thornton, No. 31, Merrimack, 170 members.

Warner, No. 90, Warner, 154 members.

Souhegan, No. 10, Amherst, 152 members.

Capital, No. 113, Concord, 146 members.

Fruitdale, No. 106, Mason, 141 members.

Uncanoonuc, No. 40, Goffstown, 141 members.

McClary, No. 102, Epsom, 139 members.

Friendship, No. 110, Northfield, 135 members.

Narragansett, No. 46, Bedford, 126 members.

Rochester, No. 86, Rochester, 126 members.

Hooksett, No. 148, Hooksett, 124 members.

Harmony, No. 99, Sanbornton, 122 members.

Mt. Washington, No. 116, Whitefield, 118 members.

Granite, No. 7, Milford, 117 members.

Winnepesaukee, No. 51, Meredith, 117 members.

Hollis, No. 12, Hollis, 114 members.

Scammell, No. 122, Durham, 113 members.

Lebanon, No. 126, Lebanon, 112 members.

Golden Rod, No. 114, Swanzey, 111 members.

Chichester, No. 132, Chichester, 108 members.

Loudon Surprise, No. 121, Loudon, 107 members.

Atkinson, No. 143, Atkinson, 102 members.

White Mountain, No. 50, Littleton, 101 members.

Seventy-two Granges report a membership between 50 and 100.

Amoskeag, No. 141, Manchester, has initiated 64, the largest number initiated by any Grange. Atkinson, No. 143, Atkinson, has initiated 45, and Grafton Star, No. 60, Hanover, has initiated 39. Honor Bright Grange, No. 153, Sullivan, has made the largest percentage of gain, having increased its membership from 31 to 64.

One Pomona Grange has been organized during the year, Carroll County Pomona Grange, No. 8, Alonzo Towle, master.

The Pomona Granges in the State are eight in number, with a membership as follows:

Hillsborough County, No. 1, 209 members.

Eastern New Hampshire, No. 2, 632 members.

Merrimack County, No. 3, 397 members.

Belknap County, No. 4, 255 members.

Northern New Hampshire, No. 5, 183 members.

Cheshire County, No. 6, 325 members.

Mascoma Valley, No. 7, 191 members.

Carroll County, No. 8, 131 members.

The total membership of these Granges, September 30, 1890, was 1,895. The total membership, September 30, 1891, was 2,315, making a net gain of 420.

The gains are as follows: By initiation—males, 224, females, 188; reinstated—males, 2, females, 3; charter members of Pomona Grange, No. 8, 85.

The losses are: By suspension for non-payment of dues—males, 40, females, 28; by dimits—males, 1; by withdrawals—males, 7, females, 6; by death—males, 9, females, 1.

Sullivan County Pomona Grange, No. 9, Bela Graves, Unity, master, was organized December 4, with 71 charter members.

Cash receipts for the year are as follows :

Cash returns for the December quarter, 1890	.	\$792.27
“ “ March “ 1891	.	938.58
“ “ June “ 1891	.	793.56
“ “ September “ 1891	.	948.44
		<hr/>
Total receipt, as per treasurer's report	.	\$3,462.95

The receipts for the year ending September 30, 1890, were \$3,088.92, making a net gain in dues and fees during the year of \$373.93.

Every Grange in the State is squared on the books of the State Grange to September 30, 1891.

The four Granges making the largest cash returns are located as follows :

Manchester	.	\$101.30	Hanover	.	.	\$79.68
Pembroke	.	73.36	Atkinson	.	.	56.92

The expenses of the office for the year have been as follows :

Postage	.	.	.	.	.	.	\$114.44
Printing and stationery (master and secretary)	.	.	.	.	.	.	312.95
Office supplies and incidentals	.	.	.	.	.	.	94.55
							<hr/>
Total expenditures	.	.	.	.	.	.	\$521.94

An itemized exhibit of the foregoing receipts and expenditures has been submitted to your executive committee, duly audited by them and approved.

Eight years ago we assumed the duties of this office as secretary. During the entire period we have endeavored to faithfully perform those duties, the single object in view being the extension and advancement of the principles of our Order

throughout the State. We have all coöperated together for this result. Officers and members alike are entitled to congratulation upon the result which it has been our pleasure to record.

The records tell you the story and I ask your attention to the following brief recapitulation, showing the steady, onward growth of the Order :

	No. Granges.	No. Members.	Cash Receipts.
1883 . .	64	3,443	\$1,115.06
1884 . .	73	3,973	1,372.64
1885 . .	77	4,422	1,404.22
1886 . .	86	4,983	1,955.74
1887 . .	92	5,865	2,001.86
1888 . .	103	6,701	2,289.70
1889 . .	107	7,560	2,970.40
1890 . .	122	8,838	3,088.92
1891 . .	130	9,870	3,462.85

By the foregoing statement the number of Granges have more than doubled, the number of members increased nearly threefold, and the cash receipts are more than three times the amount of 1883.

Thanking you for your attention, we submit the report.

N. J. BACHELDER,
Secretary.

Rev. George W. Patten made the following report :

REPORT OF CHAPLAIN.

Worthy Master, Brother and Sister Patrons :

It is a clear case to me that we owe ourselves and each other most hearty congratulations for the prosperity which has crowned our efforts during the past year. Our Order has never experienced a more steady, healthful, and rapid growth, than during the twelve months just closed. We cannot but remark, also, the increasing good feeling, interest, fraternity inside the gates, as well as the deepest respect accorded by

the world at large. We note with pleasure and hope the augmenting influence our Order is exerting upon legislation, both state and national, and upon every aspect of society, wherever it finds a local habitation and a name. And I am sure, dear friends, that the elation and joy that I feel finds a response in all your hearts, at the large and intelligent attendance at the very opening of this session, auguring as it does, the most successful and enthusiastic convention our Order has ever experienced in the State.

Not only are our members increasing and our influence extending, our Order is constantly becoming more and more useful to its membership. This is a utilitarian age. Every movement, every institution, to-day, must be measured and judged, commended or condemned, by this distinctively modern standard; and so far as the Grange is concerned, we court the application of this test. In every New England village it has become a centre of culture, of political purity and independence, of social purity, of moral and religious inspirations, so that these communities have been transformed by the presence and work and influence of the Grange. Home life is, at the same time, being purified, and all family relations improved, whilst neighborhood amity and good fellowship are promoted and the whole moral life lifted to a higher level of excellence.

I have lived beyond middle life. It has been my privilege to dwell in rural communities in different sections of our country. I have looked with interest and hope upon the various institutions, organizations, and orders whose avowed purpose is the benefiting and improvement of humanity. And, therefore, when I am constrained to say, as I do most emphatically, that the Order of Patrons of Husbandry is superior to them all in the grand work it is doing for its members in particular, and for the entire communities where it exists in general, it cannot be altogether the outcome of prejudice.

Hence, I repeat at this time what I have often said before, that in its moulding, inspiring influence upon old and young; in its ability to care for the best things in society; in its

power to bless and redeem humanity, the Grange is second only to the church, and it is doing something that the church cannot do. In almost all communities there are several struggling churches representing as many varying sects. In the fierce struggle for existence to which they are subjected, antagonism must be engendered between the individual members to influence the sentiments of sectarian animosity. Each organization, from regarding all the others as competitors, grows unconsciously to look upon them as enemies, to the destruction of Christian unity and the marring of Christian charity. And the same remarks, with obvious modifications, will apply to political parties. Now, the meeting and mingling together in the Grange of men and women from all these churches and from all political parties cannot but promote that knowledge which tends to good understanding, peace, amity, and good feeling.

Much remains yet to be said of the educational features of the Grange. Besides the special technical knowledge of the farmer's business, which its discussions and other exercises convey, each local Grange combines all the advantages of social club, debating society, and literary association; it furnishes an arena for the discussion of social science and political economy. It is a perpetual farmers' club, with the enormous advantages which a mighty growing state and national organization confers, when quickening pulses arouse its waning energies or interests. It is a lyceum that runs the year round, where all practical questions of interest to men and women, to old and young, are considered in the broad relations which they bear to neighborhood, state, and nation. It is a school of applied politics, ethics, religion; where all are teachers and all are pupils, and where the bonds of fraternity make all equal, free from criticism, and devoid of fear. And where can the young men and women find such an opportunity as our orderly, well conducted, and interesting meetings furnish for learning to read and speak in public, for instruction in the political requirements of parliamentary law, and the proper methods of conducting public meetings?

One important feature of this Order has not been as generally considered as the educational. All other orders, without exception, draw their members almost exclusively from the cities and villages. The Patrons of Husbandry, on the contrary, depend entirely upon the farmer's family for its constituency. The farmers of New Hampshire are of absolute necessity isolated from their fellows. The land is so broken and uneven that it is impracticable to locate large numbers of farmers about a common centre, as in some other countries, thus bringing the homes of the group into contiguity. Now, this enforced isolation for several generations has had a deleterious influence upon the farmer himself, as well as his wife and children. This isolation, with its inevitable bad effects, the Grange is neutralizing; or it furnishes the opportunity and incentive by bringing practically the whole family to its deliberations and amusements and social commingling, for all to be benefited, instructed, and entertained. And, Worthy Master and brethren, neither do I despise the financial opportunity which our Order presents to us. I believe that our experience in regard to fire and life insurance, and to the organization and successful management of agricultural fairs, proves most conclusively that this neglected field of business coöperation is capable of a rich harvest. It is my firm belief that with proper organization and with good business men for managers, tens of thousands of dollars could be saved to New Hampshire Patrons annually. And you are capable of doing this business yourselves; you do not need any outside help; and until this is effected we are living distinctively below our privileges. Croakers will tell you, as they said to me about our county fair, "You will find that it requires something more of ability to run a fair than to raise turnips or drive a bull to the grounds." Yet our fair was off and away superior to any ever run by the lawyers and business men of Keene. And so it will be with coöperation among our membership, if we can ever inaugurate it.

But these things require time, and they will all come in time. The work of our Order is one that presses all the time

to be done. Let our motto be, "All at it, and all the time at it." Whatever we do, let us strive to do well. Let us be honest, be just, and fear not.

GEORGE W. PATTEN,
Chaplain.

REPORT OF CERES.

Worthy Master, Sisters and Brothers :

The summer is passed, the harvest has been garnered and we are again reassembled in this beautiful city of spindles, where we have many times in succession been so cordially and heartily welcomed by our brothers and sisters of Amoskeag Grange.

These annual reunions of Patrons from all over our Granite State not only cement, as they do, the indissoluble ties of fraternity and love, but strengthen and enliven our principles of Faith, Hope, and Charity. For we are linked together by a common interest, in a common cause, for a common good. We come with joy and happiness pictured upon our every countenance; with warm fraternal feelings in our hearts for this beloved Order which we represent. We have learned to love and respect it for the vast good it has done and no doubt will accomplish in the future, in elevating the character and increasing the influence of its members.

As Ceres, my emblem is the "Golden Grain." The myth of Ceres is symbolical of the growth of grain. Some consider that this is intimated in the name "Demeter," which is thought to be equivalent to gemeter — "Mother Earth." The relations of the worship of Ceres with agriculture, social order, etc., were expressed in her two festivals. Among the Romans her festivals were styled "Cerelia," and of these the most interesting was the feast celebrated by the rural population shortly before harvest, when the country people, dressed in white and crowned with oak leaves, danced and sang harvest songs in honor of the goddess. As Ceres we have endeavored to preside in our position among Patrons, to show our regard for agriculture, and to encourage our brothers to

work with diligence and prudence. The sickle has been kept duly bright and has not been allowed to rust and corrode for want of proper use and care in garnering a bountiful crop of golden grain.

And now, Patrons, as we retire from the office of Ceres to the ranks, we bespeak for our successor the same friendship, courtesy, and fraternal greeting that have in all cases been extended to us, assuring you that the associations here formed during my term of office have always been of the most pleasing character, and will be duly cherished in fond memory.

Mrs. CHAS. McDANIEL,

Ceres.

REPORT OF POMONA.

At your session two years ago it was my fortune to be elected Pomona of the State Grange. The duty imposed upon Pomona, as laid down in the ritual of the Order, is special attention and care of the department of fruits, to urge their cultivation and improvement upon her associates, and encourage woman to engage in that work whenever proper.

But let us remember that no trees bear fruit in autumn which do not blossom in spring. A truth which can as well be applied to the mind as to fruit trees. And the youth, who by study, by precept or example, store the mind with a true knowledge of right, are likely, in the autumn of life, to display by their good manners, good deeds, and noble purposes, fruits that will redound to their honor and to the public welfare.

Knowledge does not comprise all which is contained in the large term education. The feelings are to be disciplined; the passions are to be restrained; true and worthy motives are to be inspired; a profound religious feeling is to be instilled, and a pure morality inculcated under all circumstances. And it seems to me that the Grange is one of the best mediums to produce this grand result. And let us, as members of this great organization, set examples worthy to be followed by the youth of our land; for the influence of example is either a

blessing or a curse, either for good or evil. It cannot be neutral.

The amount of good which is being done by these thousands of meetings can scarcely be estimated. Our social faculties are enlarged and improved, our minds strengthened, and our circle of acquaintances enlarged.

Let us, then, in view of the wonderful growth and success of the Grange for the twenty-five years of its existence, press forward with united purposes and united efforts to accomplish the grand purposes for which it was intended — the elevation of the farmer and his family.

HATTIE M. BENNETT,

Pomona.

E. C. Hutchinson, general deputy, made a comprehensive report, giving the condition of the Subordinate Granges as reported to him by the district deputies and determined by visits in various sections of the State. C. H. Pettee, secretary of the executive committee presented the report for that committee.

Reports of Pomona and Subordinate Granges by masters and delegates were then called for. Forty-four masters and delegates responded to the call, after which reports were postponed until evening.

Recess was then taken to meet in public session at 7 o'clock.

EVENING SESSION. — PUBLIC SESSION.

Master Charles McDaniel presided, and surrounding him on the platform were His Excellency Gov. Hiram A. Tuttle; Hon. Mortimer Whitehead, of New Jersey, lecturer of the National Grange; His Honor Mayor Edgar J. Knowlton; Moses Humphrey, of Concord, president of the State Board of Agriculture; Prof. C. H. Pettee, of Hanover, Dean of the Faculty of the State Agricultural College; E. J. Burnham, master of Amoskeag Grange, of Manchester; Joseph Kidder, chaplain of Amoskeag Grange; Hon. John D. Lyman, of

Exeter, lecturer of the State Grange; Mrs. Dr. Towle, of Freedom; Mrs. Charles McDaniel, of West Springfield, Ceres of the State Grange; and Mrs. George J. Bennett, of Westmoreland, Pomona of the State Grange.

After interesting introductory remarks, Mr. McDaniel announced as first on the programme of the evening a song by the choir, Miss Ella M. Huntress, of Manchester, presiding at the piano.

Chaplain George W. Patten offered prayer, which was followed by an address by Mayor Knowlton, who welcomed the Grange in behalf of the city, his words being as follows:

THE MAYOR'S WELCOME.

Master McDaniel and Friends:

It is a gratification to me, representing the city of Manchester, to bring the greetings of the municipality, and the cordial, hearty welcome of all its people, to this most important and honorable organization—the New Hampshire State Grange.

We here in Manchester have learned to look forward to your visitations with something more than ordinary interest, for we feel that you are a part of us, that you are a factor in our yearly life, and we trust that the members of this large and influential body regard our city somewhat in the light of a home, to which an annual pilgrimage is made for the purpose of meeting in state convention and there transacting the manifold duties which claim attention.

Anything and everything which pertains to the agricultural interests of the State come very near to me, for I have undergone all the varied experiences and trials which fall to the lot of residents of farming communities; I have known what it is to go into the hayfield at 4 o'clock in the morning and not cease my labors for the day until 8 o'clock at night, and I presume there are many within the hearing of my voice who have oftentimes undergone a similar experience. But I count it to have been the best of good fortune to me that I

was born in the country, that my earliest associations were among people who earned their bread by the honest labor of their own hands.

It is beginning to be more and more manifest as the years roll by, that the calling of the farmer is the first and most important calling of man, that it underlies every other vocation, and I look forward to the time when the agricultural interests of the old Granite State will occupy a more advanced and even prouder position than they do to-day, and to this end this organization of the New Hampshire State Grange is a powerful and most influential contributor.

I trust that the convention opened in this city to-day will prove the most successful in the history of the Order, and promotive of the best results.

E. J. Burnham, master of Amoskeag Grange, followed the mayor's remarks with the address of welcome from that organization. It was an able effort and was received with attention. After extending a hearty welcome to visiting Patrons and briefly reviewing the history of the Grange movement, the speaker continued his remarks as follows, holding that agricultural communities from earliest times had been communities that coöperated successfully and that this was the fundamental principle in the Grange work :

When the thin line of civilization was first sketched along our coast, with a broad expanse of ocean on one side and a trackless wilderness on the other, necessity brought the early colonists into relations of close dependence upon one another. Even when the presence of Indian warfare had ceased and the settlers made themselves homes farther inland, there was still mutual dependence which was well-nigh forgotten in later years. They exchanged work in clearing their fields, they built their sawmills on shares, they even took a neighborly interest in a neighbor's fire, because before the day of friction matches, fire must not infrequently be carried from house to house. The hand reel, the candle mould and the neighborhood brass kettle, the cross-cut saw, the broad axe, and the

chalk line were for the use of those who needed them, without much regard to ownership.

With increasing prosperity and greater independence, each farmer owned his own carts, sleds, and farming tools, while each home had its hand reel and candle mould. The people gained in independence, but they lost in neighborly kindness, insomuch that in this they had well-nigh lost the power of organization or cooperation. In many towns genuine sociability was almost unknown, and in some it was next to impossible to organize so much as a singing school. Of social life there was next to none at all. Agriculture was at a low ebb and the boys and girls were fleeing from the dreary prospect. Then came the Grange. It taught neighbors the art of being social; it promoted a feeling of good neighborhood; it trained people to bear and forbear, and work together for the common good; it gave the young people opportunities they had not enjoyed before, and it drew the older people out from within themselves; it softened the asperities of a selfish independence and restored something of the neighborly cooperation of the olden time.

This much the Grange had accomplished in its first quarter century. Whether it should go on to yet farther usefulness remained with the Patrons themselves. The field was large, much yet remained to be done and the promise was bright that willing workers would not be lacking.

Hon. John D. Lyman responded to the address of welcome in behalf of the State Grange for the royal welcome extended, and to the city for the splendid manner in which the State Grange is always entertained when it holds its session in Manchester. During the course of his remarks the speaker reviewed the past of New Hampshire's agriculturalists and contrasted their position to-day with that of fifty years ago, showing that with the Grange work and influence there had indeed been great progress.

The marvelous growth of Manchester was commented on, and the city of to-day was contrasted with the hamlet of years

ago, when it was classed with Litchfield and other towns taken collectively to obtain population enough to enable them to be represented in the Legislature, while to-day it is represented by nearly as many people as some States have in their Legislature, and yet able every year or two to produce a governor. The speaker said of these old times that some people delighted to recall them, but he for one was glad they had passed away and the sunshine of progress and prosperity now shone on the nation, and that instead of the old style of kidnapping men and making servants of them, the present generation were kidnapping the rivers and the lightning and making them servants of the people. It is an age of progress as is demonstrated here in Manchester, where you have dammed the river to bless the people.

The part the Grange took in the proceedings at the last session of the state Legislature was reviewed and commended by the speaker, and the excellent governor we now have was complimented and assured of the sympathy and support of the Grange in all his efforts to benefit the people of the old Granite State.

His Excellency Gov. H. A. Tuttle was then introduced and spoke as follows:

GOVERNOR TUTTLE'S ADDRESS.

Ladies and Gentlemen of the State Grange:

I am especially pleased to be here to-night from the fact that I have long been a member of your most excellent organization. Born and partially reared on a farm, I have always felt a deep interest in the industry of agriculture and have watched with great pleasure the growth and increasing influence of the Grange. Yours is an organization that deserves success. Devoted to the welfare and upbuilding of the men and women who continue to till the soil of New Hampshire no work could be more deserving than yours. The title of Grange means "farm," and your solicitude is for the welfare and prosperity of those who cultivate the soil. Fundamentally

non-political, based upon the idea that "No Grange, if true to its obligations, can discuss political or religious questions, or call political conventions, or nominate candidates or even discuss their merits in its meetings" — you are in a position to win the respect and support of all good men in our State, which I have reason to believe you now have.

The growth of the Grange in this country has been remarkable. I do not know its present membership, but I remember to have seen that at the close of the year 1875 it numbered a million and a half of members. When it is considered that its birth was in 1867, and that its growth barely commenced until 1872, this rapid increase in membership was certainly phenomenal. I have supposed that in some portions of the West its strength had declined, while in New England it is as strong or stronger than before. You have only to keep the organization in the same lines to make it a great power in this State. Freed from all entangling alliances with politicians or political parties, your influence will be everywhere felt and your wishes in matters of legislation will not be ignored. New Hampshire is essentially a manufacturing State, and yet our agricultural interests are of great importance. While our farms are, for the most part, rocky and hilly, the soil is rich, and if properly cultivated seldom fails to reward the labor expended on it.

The crops produced in New Hampshire per acre far exceed those of the South, and compare favorably with the most favored agricultural sections of the country. Very likely our farmers have to work harder than those in the West and South, but they have home markets, good society, excellent schools, and social and church privileges to compensate for the disadvantages. The social features of the Grange are doing much towards keeping the sons and daughters of the farmers contented and happy. The beautiful ritual of the Order teaches the delight and pleasures of true farm life, and the social gatherings with song and essay to enliven the occasion tend to shorten the winter evenings and to cheer the hearts of all who participate.

It would be out of place for me to attempt to instruct practical farmers in the matter of cultivating the land, and yet I have sometimes thought that many New Hampshire farmers fail to grasp the essential ideas of successful husbandry. There was a world of truth in the response of the priest when the Irishman asked him to pray that his farm might produce good crops. The priest looked over the field and said, "Patrick, it is manure, not prayer, that your land needs." And so when I see farmers selling their hay and reducing their stock, I cannot help thinking that their land will soon be in the condition of that which the priest condemned.

Too many farms are allowed to run down for want of intelligent care, and too many deserted farms are the result of mismanagement and poor judgment. The industrious, intelligent farmer can get a good living in New Hampshire, as you men of the Grange well know. But I am talking too long. I can only add that if the farmers stand together the interests of agriculture will thrive in New Hampshire. Liberal laws will be enacted, and the officials of the State will vie with each other in their efforts to promote the interest of the industry upon which rests the fabric of social order and commercial prosperity. So far as I am individually concerned, both as a citizen and an official of the State, you will surely have my warmest sympathy and heartiest coöperation. I know that this meeting will be of great interest to the cause you represent and that through your deliberations added happiness and prosperity will come to the homes of the people of the State which we all love.

At the conclusion of the address by the governor, State Master McDaniel called on State Treasurer J. M. Taylor to respond to the remarks of Governor Tuttle.

STATE TREASURER TAYLOR'S REMARKS.

Worthy Master, Patrons and Friends:

The rapid flight of time has made its round and we find at the end of another year we are permitted again to assemble in convention.

Worthy Master, in turning the table, time will not permit me to even attempt to discuss the principles, growth, and prosperity of the Order of the Patrons of Husbandry in our State, but to only mention a very rambling thought in this connection. Prior to the establishment of the Grange the farmers were without organization. The Grange was the first organization established in the history of civilization for the protection and advancement of farmers' rights. The means of information were very limited. There were but very few newspapers devoted to improvement in the methods and development of agricultural science. No coöperation in agricultural effort, no experimental operation, but a spirit of criticism existed among the former, — barriers almost sufficient to shut off nearly every chance for advancement in agricultural knowledge and success. The social relations of life were far beneath the privileges and duties of a common brotherhood. There has been a great misapprehension in regard to the importance of educational advantages, especially in our business relations, and many other considerations that are worthy of our best thought.

But the scene has changed, the Grange has been established, and who can recount and estimate the good accomplished? It has done more than all other agencies combined to develop a higher manhood and womanhood among agriculturists, to elevate our brothers and sisters and secure to us those rights to which we are justly entitled under the constitution of our country. It has raised the standard of moral and intellectual being of the masses of the people. How many a bright intellect seemed buried beneath the rubbish and inexperience, which is now being brought out with an almost miraculous development through a connection with and influence of the Grange, thus proving that the mind is susceptible of large growth. The great mission, then, of our Order is to educate and raise the masses, to better their part in the great drama of life. Who can doubt the ability of the farmer to fill any place in the busy scenes of life, when properly trained? Who has a better opportunity for an

enlargement of thought and development, than he who is constantly breathing the pure air of heaven, basking in the full sunshine of God's everlasting love with no distraction or hindrance! Not shut up in the prison room of the corporation machine shop nor behind the doors and windows of the law office, but rather surrounded by the forces of nature. It is a very pleasing thought that a large majority of the executive officers of our nation came directly or indirectly from the the cabin of the common farmer, and thus may we hope to see more presidents, more governors, more councillors, more senators, more representatives, more business men taken from the people filled with the fundamental principles of the Grange. In conclusion allow me again to say, in behalf of this convention, I thank you for this kind welcome, thank you for the pleasure of this hearty hand-shaking and cordial greeting; and we, as Patrons, should feel very thankful to the great Master of the Order universal for the prosperity and success of our Order the past year.

ADDRESS OF HON. MORTIMER WHITEHEAD.

Hon. Mortimer Whitehead, lecturer of the National Grange, was introduced at the conclusion of Mr. Taylor's remarks, he having arrived on a late train. He spoke especially of the influence of the Grange upon legislation throughout the country during the twenty-five years of its existence. It had secured a recognition of agriculture in the cabinet, the passage of the oleomargarine law, the passage of the Hatch bill for the establishment of an experiment station, and could boast that there were now seventy farmers in the House of Representatives, whereas a few years ago, they were glad to count sixteen farmers in that body.

He said the next thing which the Grange was striving for, and would yet secure, was the free delivery of mails in the rural communities, thus giving farmers the same postal facilities already enjoyed by the people in the cities.

The national lecturer's address was full of telling points, illustrated by ready anecdotes, and was heartily received by the audience.

ADDRESS OF MRS. ALONZO TOWLE.

We have been considering the future welfare of our girls of late, endeavoring to point out a way by which, in our judgment, their future could be made brighter, happier, and more successful as farmers' wives in the time to come. But this does not affect those already farmers' wives. As a class they do need many words of encouragement and cheer. They have been referred to all along the line as those who are the wives of nothing but "common farmers," as though this appellation was enough to ostracize them. With this has been a certain amount of condescension toward many who had not the courage to meet it on its own ground. Then, owing to their isolation and absorbing cares, they are apt to drop into ruts and routine, forgetting themselves and their obligations to the world. They have not been, and are not now, ready or willing to grasp the many helps extended to them for their good. Owing to many obstacles in the way, they are likely to give up, socially sickened, but not unto death. In each of these conditions the person who plants courage in the heart is the best physician. While others have been complaining and wailing, farmers' wives have held their peace, repressed their ambitious thoughts, much to the harm of the generation following.

While we believe that every woman has a large sphere, all her own, to work in, and we would have a thorough house-keeper and home-maker, she also has rights and privileges, as well as duties, peculiarly her own. She should be the first object of interest with the husband and children, for they are wholly dependent upon her in every way. She is and always has been the burden bearer of the family, the vital principle in the home-life; when her light goes out, my children, your home-life is ended. She should be ever solicitous for her own physical well-being. Should zealously guard her own health; without this precious boon woman's life is but miserable in the best situation. As workers, we should strive for the happy medium between indifference with slovenly habits and the other extreme of fussy detail, that so plays upon the nerves,

until we are no longer responsible beings. For we would have woman deserve her merits as well as preserve herself. Inertia means death, not preservation, so a constant demand upon our physical members will in the end have the same result. Hence the necessity of our striving to strike the medium.

Work of a proper amount is strengthening — worry is waste. Work wisely done causes growth — worry hinders growth. Some both work and worry at the same time. You must stop this if you do not wish to grow old before your time, besides losing the happiness which may be yours every day. Stop it! How? By your own efforts, working in unison with all good and true influences from above and around. There are many things we worry about which do not amount to much. You have seen some woman fret over a trifling affair that wasn't worth even mentioning. You have also seen that same woman do heroic deeds in the time of need or dire calamity, that no one could do unless possessed with a self-sacrificing and courageous spirit. You have seen her in the sick room by the side of the dying and the dead, administering to those suffering from the infirmities of age and caring for the young and helpless, doing all with the courage of a true soldier.

What does this tell us? That because of her fine organization, her peculiar duties and occupation, she needs ever in her mind the presence of some great thought or object in life, to act as a counter-irritant upon her sensitive nerve centres, helping her to maintain a neutral equipoise, keeping her out of the mire and dirt of every day worry and fret. Real brain work is what we need, regularly and persistently carried out until these refractory nerves are subservient to the will power. There are many things that farmers' wives may take up as a central thought, for one we must have. Books there are on every side, we may avail ourselves of any or all we please. Select some subject and follow it along the line — scientific cookery, chemistry of food, hygiene, adulterated foods — the many subjects directly appertaining to the farm-botany and geology, which will make us love our country homes more and

better; music, painting, drawing, missionary work of all kinds, in fact anything that will elevate our aims and beautify our lives, keeping us from the monotony of routine which is almost sure to develop morbid thoughts and fancies with disease following in their train; keeping us from those habits which are so prevalent in country places where everybody knows everybody's business and is much inclined to talk about it.

Beside books to be studied as studies, there are so many other good books, pleasant and helpful, that everyone may have their choice. When we are tired and feel like fretting, let us stop, it is because we are tired and have allowed ourselves to drop into a habit perhaps. Give the physical a rest and the mental muscle a little work. Not too long, as we may overtax the mental or neglect something. If we are situated so that it is impossible for us to stop, no matter what our condition is, then here is the place that demands that Balm in Gilead of the Great Physician. How many times and how often, when we feel we are utterly powerless to act further, does our urgent necessity become the Good Father's grand opportunity to teach us His divine power and helpfulness. And in this way, my sisters, using our own power of judgment and self-control, disciplining ourselves as we would discipline another, seeking wisdom and help from that Book of Books, we may feel that we are on the way to a strong and hopeful matronhood, at last, if permitted, to be crowned by a lovely old age.

No nation upon earth gives woman such liberty of action as our own. Americans point with pride to the position of women in this country as an evidence of our high level of civilization. Still there is a cry going up from some for a broader sphere. We have nearly the "whole earth and the fulness thereof," now, is there anything more for us? We cannot tell just yet. If we will take what is already ours, make the most of our present opportunities for our own improvement, the future will be much safer and bring us a much larger share of happiness and success. Consider what has

already been done. When Cæsar landed in Great Britain, 55 B. C., he found the land inhabited by a class that we will call savages. One hundred years later, women were like wild animals in their savage ways. Then came the German, the Anglo-Saxon followed—heathen tribes who fought each other like wild beasts, below the Briton in civilization. The Romans looked upon them as we look upon the negroes of Central Africa to-day. There is not very much to be proud of in our remote ancestry, our ancestry minus the civilization of Christianity, and the effects of mental development.

Even the wise Socrates asks, “Is there a human being with whom you talk less than with your own wife?” What a question for a husband to ask! What a question to be recorded upon the pages of past events, to be handed down for years untold. Who blames his wife, Xanthippe, for being cross and naughty?

It is said that an Englishman of to-day even cannot consult with a woman upon business matters, or anything of importance, without feeling his condescension. He considers himself superior, simply because he is a man and talks down to her. It is not so with Americans, or it is not so with a well bred American. He weighs them all mentally, both men and women; takes what they say for what it is worth. English ladies are our superiors in politics. They canvass at all the elections, talk politics, and are well informed. We have not come to that place in our history, or in the evolution of events, where we have time or inclination to do either. Yet, brothers, if you see that wife of yours consulting the periodicals of the day in regard to the public issues, some of you are troubled, and you keep “wagging” because some women are talking about liberty and independence. There are two sides to every question. We who are not ambitious in certain directions keep asking, “What’s the matter with the women of the nineteenth century?” Let us see if we can find out. What sent our forefathers to this country? What caused them to brave old ocean’s treachery and seek a path across an unknown deep? They loved and longed for

liberty of thought and action more and better than they loved their lives or their homes. It was the incentive to every effort. It opened a fountain whose streams have coursed their way down through succeeding generations, gathering momentum as the years have passed. What's the matter with the woman of the nineteenth century? She is feeling the drum-beats of '76—those of old Lexington, Concord, and Bunker Hill—rebeating and pulsating in every heart's throb. "Give me liberty or give me death," has become engraven upon the brain and infused into the blood of your mothers, wives, and sisters, as well as into your own. And why not? Were they not born and bred by the same people, subject to the same conditions, influenced by the same motive power as an incentive to action? Then cease blaming women for those tendencies, those habits of thought and action which the blood of her ancestors and the conditions of the times have imprinted upon her without her sanction. Let her alone. Right will be triumphant because God is just. Do not be afraid of the ballot box. Make of yourselves such kind, loving, and appreciative husbands, that your wives will never wish to leave your side. For no matter how much is hers, of knowledge, of development, and of everything this world can give, if you who were her heart's best choice will but be kind, tender, and true, no power on earth can usurp yours. On the contrary, if you choose to be the opposite, the woman of the future will have avenues of happiness in her own mentality, which no one can take from her.

Of the future in other directions we can not speak. The signs of the times indicate some things, but our duties lie in the present; to make the most of life, to help others as we have opportunity, to be content if not satisfied, full of hope and cheerfulness. We have learned enough of life to know that no matter how much we may be opposed to measures and acts now, we may change our conclusions of thought in the future. The only unchangeable and everlasting truth is God, and those virtues and laws emanating from Him; all other things—customs, habits, human laws, and our own

ideas—are all continually subject to modification and change. So it will be safer for us to prepare for a future of wiser and perhaps better days. We should also rejoice together that we are good New England Yankees, to be which, as an agricultural people, is to be envied as far as all things that make life worth living are concerned. When compared with any other country's farming people we realize this truth. In England they exist under entirely different conditions; in Southern Europe their condition is growing from bad to worse. Russia has millions of half-civilized, starving peasantry; here everyone may have a living if they will work, all may have somewhat of what we call education, if they will. The benevolence of the people has also prepared a place for unfortunates of every kind.

I repeat, when we compare our condition with that of any other country's we can but feel that with all the short-comings of men and the imperfections of their deeds, that this, as a Republic, has the most substantial foundation, the most trustworthy superstructure. We should, particularly, be proud who claim for our home this picturesque old Granite State, where the sun rises over mountain peaks that are twin sisters to the clouds, where the rosy sunsets are reflected from myriads of lakes that speak peace to the soul. Where old Nature triumphantly hurls obstacles in the way to hinder her sons and daughters and to make them staunch, persistent, and reliable. Let us be glad for the conditions and gifts, remembering with them all that there is but one lasting happiness—duty; there is but one natural consolation—work.

No further business appearing, the Grange was closed in form at 10.45 o'clock.

SECOND DAY.

In accordance with the order of Tuesday, the Grange assembled at 9 o'clock, and after a song by the choir, was duly opened in the fourth degree by the worthy master.

The roll was called and a quorum found present.

The journal of Tuesday was read and accepted.

Chairman Hutchinson of committee on Credentials, submitted supplementary report as follows :

Worthy Master :

Your committee on Credentials beg leave to submit the following supplementary report, and report the presence of—

Mr. and Mrs. Almon W. Morse, Wyoming, No. 54, South Weare.

Robert T. Gould, Union, No. 56, Hopkinton.

J. Frank Towle, Chichester, No. 132, Chichester.

Mrs. G. F. Farley, Junior, No. 150, Goffstown.

George K. Harvey, Delegate, Surry, No. 156, Surry.

Mr. and Mrs. B. Frank Davis, Jeremiah Smith, No. 161, Lee.

George T. Buchanan, Antrim, No. 98, Antrim.

Charles A. Gile, Pembroke, No. 111, Pembroke.

E. Gerry Ladd, Lawrence, No. 117, Belmont.

Mrs. Alonzo Towle, Carroll County Pomona, No. 8, Freedom.

Mrs. Roger A. Paull, Hollis, No. 8, Hollis.

E. C. HUTCHINSON,

For Committee.

The following telegram was received and greeted with enthusiasm :

BOSTON, Mass., December 16, 1891.

Hon. Charles McDaniel, Master N. H. State Grange :

Massachusetts State Grange in Nineteenth Annual Session assembled—a large and enthusiastic gathering—send fraternal greetings to their co-workers in the Granite State. We pledge our combined coöperation in all measures that tend to strengthen and perpetuate our Order.

N. B. DOUGLASS,

Master Massachusetts State Grange.

On motion of Brother Lucien Thompson, voted that the worthy master send a response; and on motion of Brother

Lyman, voted that the worthy master also send a telegram to the Maine State Grange.

In accordance therewith, the following telegrams were sent:

MANCHESTER, N. H., December 16, 1891.

To Hon. N. B. Douglass, Master Mass. State Grange, Boston, Mass.:

The fraternal greetings of your noble State Grange have been received with enthusiasm by the New Hampshire State Grange, with 700 Patrons assembled to-day. We bid you God-speed in the work of elevating and educating the Patrons, and we extend to you our cordial sympathy and coöperation. Fraternally,

CHARLES MCDANIEL,
Master N. H. State Grange.

MANCHESTER, N. H., December 16, 1891.

To Hon. M. B. Hunt, Master Maine State Grange, Skowhegan, Maine:

Please accept the fraternal greetings of the New Hampshire State Grange, with 700 Patrons assembled in eighteenth annual session. May your annual Grange meeting be successful! Accept our cordial coöperation in all true Grange work.

CHARLES MCDANIEL,
Master N. H. State Grange.

Master McDaniel appointed the following

STANDING COMMITTEES.

Division of Labor and Master's Address. — G. F. Farley, Goffstown, chairman; Josiah Davis, Meriden; Charles W. Buckminster, Sullivan; Charles H. Downing, Alton; Henry M. Whittemore, Troy; Calvin Martin, Bristol; William H. Kendall, Mont Vernon; Roger Paull, Hollis; Mrs. B. F. Fellows, Sandwich; Mrs. Park E. Wright, West Swanzey; Mrs. A. J. Harmon, Ossipee; Mrs. Robert Lamprey, Tuftonborough.

Finance. — J. G. Tallant, East Concord, chairman; Timothy Blodgett, Fitzwilliam; A. J. Harmon, Ossipee; J. L.

Pendexter, Conway; William U. Carlton, Goffstown; Otis H. Chellis, Newport; S. W. Hurd, Washington; Mrs. Charles H. Downing, Alton; Mrs. Henry M. Whittemore, Troy; Mrs. Calvin Martin, Bristol; Mrs. Winslow A. Partridge, Chesterfield; Mrs. E. J. Burnham, Manchester.

Good of the Order. — George A. Wason, New Boston, chairman; W. W. Burbank, Webster; B. F. Fellows, Sandwich; Park E. Wright, West Swanzey; Winslow A. Partridge, Chesterfield; Eugene E. Sawyer, Atkinson; Robert Lamprey, Tuftonborough; Erastus C. Bailey, Claremont; Mrs. W. H. Berry, Barnstead; Mrs. Warren Saltmarsh; Hooksett; Mrs. Almon Twitchell, Richmond; Mrs. F. C. P. Gibson, Rindge.

Education. — George F. Pettingill, Enfield, chairman; O. Goss, Laconia; Alvah E. Otis, Rochester; William S. Keith, Milford; Frank G. Whittemore, Lyme; John F. Dickey, Alstead; Arthur C. Graves, Henniker; Harry A. Wilkins, Amherst; Mrs. Charles H. Barnes, Walpole; Mrs. R. B. Foster, Loudon; Mrs. Lucien Thompson, Durham; Mrs. George W. Dow, Centre Barnstead; Mrs. George W. Stone, Andover; Mrs. H. A. Hill, Derry.

Agriculture. — Alonzo Towle, Freedom, chairman; Thomas E. Hunt, Laconia; R. B. Foster, Loudon; George W. Dow, Centre Barnstead; George L. Capron, Marlborough; C. E. King, Whitefield; Frank B. Hardy, Nelson; Elmer D. Kelley, Franklin; Mrs. Marcus C. Stone, Swanzey; Mrs. Fred C. Gowen, Dublin; Mrs. Frank T. Collins, Gilmanton; Mrs. B. H. Griffiths, Stoddard.

Mileage and Per Diem. — Fred P. Hatch, Lebanon, chairman; Charles H. Barnes, Walpole; Marcus C. Stone, Swanzey; J. E. Shepard, Concord; George H. Wadleigh, Tilton; H. G. Smith, West Chesterfield; Alvin Davis, Canaan; James Sheldon, Wilton; William C. Wilder, Lyndeborough; Lowell T. Mason, Canterbury; Mrs. F. H. Flanders, East Andover; Mrs. George F. Pettingill, Enfield; Mrs. Frank G. Whittemore, Lyme.

Constitutional Amendments and By-Laws. — Edwin S. Spaulding, Mason, chairman; Henry P. Blake, Hill; Fred C. Gowen, Dublin; James H. Tripp, Epsom; Frank T. Collins, Gilmanton; B. H. Griffiths, Stoddard; George W. Frisker, Boscawen; Mrs. W. M. Knowlton, New London; Mrs. T. S. Pulsifer, Plymouth; Mrs. George B. Barnard, Hebron; Mrs. George D. Epps, Francestown.

Resolutions. — J. D. Lyman, Exeter, chairman; George W. Stone, Andover; James G. Stone, Londonderry; M. H. Merrow, New Hampton; F. H. White, Harrisville; T. S. Pulsifer, Plymouth; H. A. Hill, Derry; Mrs. Kimball Webster, Hudson; Mrs. C. W. Bedell, Littleton; Mrs. William U. Carlton, Goffstown.

Coöperation. — Fred H. Smith, Meredith, chairman; Bela Graves, Unity; W. H. Berry, Barnstead; Irwin D. Newton, Newton; Warren Saltmarsh, Hooksett; Almon Twitchell, Richmond; E. W. Pike, Goshen; James M. Perkins, Marlow; John G. Read, Merrimack; Mrs. Clement L. Mansfield, Westmoreland; Mrs. J. W. Mower, Jaffrey; Mrs. E. E. Rugg, Keene; Mrs. T. C. Brockway, Newbury.

Transportation. — Lucien Thompson, Durham, chairman; Harvey Jewell, Winchester; George Farr, Littleton; Clement J. Mansfield, Westmoreland; W. J. Mower, Jaffrey; F. C. P. Gibson, Rindge; Henry E. Sanborn, Auburn; Mrs. George P. Slate, Hinsdale; Mrs. W. S. Mansfield, Gilsum; Mrs. Frank B. Hardy, Nelson; Mrs. George W. Fisher, Boscawen.

Publications. — E. J. Burnham, Manchester, chairman; James Burnap, Marlow; George P. Slate, Hinsdale; Charles J. Burleigh, Ossipee; W. S. Mansfield, Gilsum; V. C. Brockway, Newbury; Arthur H. Hill, Northfield; John L. H. Marshall, Nashua; Mrs. J. E. Shepard, Concord; Mrs. Henry P. Blake, Hill; Mrs. T. H. White, Harrisville; Mrs. G. P. Titcomb, Salisbury.

Claims and Grievances. — F. H. Flanders, East Andover, chairman; Fred W. Roby, Wilmot; Hiram S.

Osborn, Dover; George B. Barnard, Hebron; A. W. Braley, Danbury; Charles W. Conn, Hillsborough; Mrs. Arthur C. Graves, Henniker; Mrs. W. W. Burbank, Webster; Mrs. Alvin Davis, Canaan; Mrs. William T. Connor, Mrs. George F. Mills, Dunbarton.

Dormant Granges. — Kimball Webster, Hudson, chairman; William A. Brown, Strafford; John L. Stevens, Deerfield; David Noyes, West Canaan; David H. Tufts, Strafford; William R. Stockwell, Lancaster; John Fletcher, Greenfield; George D. Epps, Francestown; Mrs. James Sheldon, Wilton; Mrs. T. E. Hunt, Laconia; Mrs. M. E. Osborn, Peterborough; Mrs. H. O. Hadley, Temple.

Trials and Appeals. — C. H. Pettee, Hanover, chairman; A. L. Sanborn, Gilford; C. W. Bedell, Littleton; R. A. Moore, Monroe; William F. Connor, Bedford; Dennis R. Chase, Derry; H. O. Hadley, Temple; Fred M. Davis, Hancock; Mrs. John G. Read, Merrimack; Mrs. J. W. Fitch, Cornish; Mrs. William H. Kendall, Mrs. Isaac Newton, Acworth.

Unfinished Business. — W. M. Knowlton, New London, chairman; W. H. Chadwick, Sutton; W. M. Flanders, Warner; George F. Mills, Dunbarton; Alvin J. Seavey, Derry; M. E. Osborn, Peterborough; Isaac Newton, Acworth; Mrs. Erastus C. Bailey, Claremont; Mrs. J. D. Lyman, Exeter; Mrs. Lowell T. Mason, Canterbury.

Special Committee on Music. — Mrs. George A. Wason, New Boston, chairman; Mrs. Alonzo Towle, Freedom; Mrs. Alvah H. Otis, Rochester; F. W. Prichard, New Ipswich; Stanley M. Abbott, Wilton.

Reports of masters and delegates of Pomona and Subordinate Granges was continued and fourteen responded to the call.

Worthy Past Master Stinson offered the following resolution:

WHEREAS, The fraternal tie that binds our membership together in our grand organization of fellowship, sympathetic in the sorrows and

afflictions that are common to us all, and more especially, perhaps, where these visitations come to the families of our noble Order; therefore, be it

Resolved, That the New Hampshire State Grange learns with profound sorrow of the severe illness under which Brother William M. Ireland, of Washington, D. C. — one of the founders of and second secretary of the National Grange — is laboring; now hastens to extend her fraternal sympathy, grateful for his eminent and appreciated services for our noble Order. Praying that the blessings of the Giver of all good may rest upon him, bringing him good cheer and consolation in this sad hour of trial and distress.

Brother Mortimer Whitehead, the worthy lecturer of the National Grange, offered remarks on the resolution, which was unanimously adopted.

The hour of special assignment having arrived, namely, the election of officers for the constitutional term, the order was taken up and the following named officers declared elected:

Worthy master, Nahum J. Bachelder, East Andover.

Worthy overseer, James E. Shepard, New London.

Worthy lecturer, Edward J. Burnham, Manchester.

On motion, the worthy master declared the Grange at recess until 1.30 o'clock P. M.

AFTERNOON SESSION.

The Grange reassembled at the expiration of the recess and work was continued.

The following communication was received from the Hon. Joseph Kidder, secretary of the board of trustees of the New Hampshire College of Agriculture and the Mechanic Arts:

MANCHESTER, December 16, 1891.

Hon. N. J. Bachelder, Secretary N. H. State Grange:

DEAR SIR AND BROTHER, — At a meeting of the board of trustees of the New Hampshire College of Agriculture and the Mechanic Arts, held at Concord on the 27th of November last, it was voted unanimously to extend a cordial invitation to the officers of the New

Hampshire State Grange to assist in the ceremonies incident to the laying of the corner-stones of the several college buildings at Durham the coming season. Personally, and in behalf of the board, I earnestly hope it will be both convenient and agreeable for your officers to participate in the ceremonies.

Due notice will be given you of the day on which the exercises will take place.

Very truly,

JOSEPH KIDDER,

Secretary.

Remarks were made on the same by Brother Pettee.

The election of officers was continued, and Ellery E. Rugg, of Keene, was declared elected to the position of steward.

The hour of special assignment having arrived, namely, the exemplification of degree work and the unwritten work, the third and fourth degrees were conferred by the officers of Junior Grange, No. 150, of Goffstown Centre.

On motion of Brother Patten, a vote of thanks was extended to the officers of Junior Grange for the creditable and impressive manner in which the degrees were conferred.

The unwritten work was exemplified by Mortimer Whitehead, the worthy lecturer of the National Grange.

The Grange was closed in the fourth and opened in the fifth degree, and seven members were presented and obligated in the fifth degree.

Recess was then declared until 7 o'clock.

EVENING SESSION.

The Grange assembled at 7 o'clock and the sixth degree was conferred in ample form upon one hundred and two candidates.

The Grange was then closed in the sixth and opened in the fourth degree. And the memorial services being the special order were then taken up.

Lucien Thompson, the chairman of the committee on Transportation, submitted the following report:

REPORT OF COMMITTEE ON TRANSPORTATION.

BY LUCIEN THOMPSON.

Worthy Master and Patrons:

This is a subject which has occupied the attention of the Grange for many years, and upon which we have, as an Order, taken decided grounds. As we see the power of the railroad corporations increased by combines, pools, and syndicates, and controlled by the few rich men, we find the farmer is the most affected both in the sale of his produce and purchase of commodities used by him. Still, we find that we have made progress, and that "it is a principle too long forgotten and never again should be lost sight of, that the creature must be subject to the creator."

Then, after years of struggle, the interstate commerce law was passed. This should be improved and such amendments added as will make it more effective. In the various cases tried before the commission, the people generally win. The hottest contest has been waged by the Grange of the little State of Delaware, who brought a suit before the commission against the New York, Philadelphia, and Norfolk Railroad and others. We know how the Grange won, and millions of dollars will be saved yearly in Delaware and Maryland to the farmers. We commend the action of the National Grange in the steps it took at its recent session, in giving moral and financial support to the State Grange of Delaware in its battle for the farmers.

We recognized the aid rendered by the railroads in developing our State and furnishing chances for new enterprises to be built up, and we condemn the efforts of the railroads to prevent short connecting lines being built, unless they can secure such legislation as will give them control of the situation. We believe that the time has come when the people should be able to ride for two cents per mile without putting twenty dollars into a mileage book. This is an advantage to the rich and an injury to the poor.

We believe that the free-pass system should receive the

attention of the commission, and that members of the state Legislature should be prohibited from accepting free passes, as the railroad monopoly secures a strong influence in this way, and the people must make it up in some way.

We believe that the transportation of the mails by the government should not stop with our local post-office, but deliver them to our doors. Why not to the farmers as well as to the city merchant or laborer?

We believe that the building of electric railroads should be encouraged, and any effort of the railroad monopolies of the day to discourage or prevent such building should be frowned upon. They tend to help build up in the outskirts of the cities, and, in the near future, as they obtain charters to the lakes, seashores, and mountains, they will aid us to secure better highways and prove, also, an additional attraction to the summer boarders, who leave so many dollars upon the farms of our old Granite State.

Your attention was called to the need of improvement in our public roads, by the committee of 1889, and also quite emphatically by the committee of 1890, who desired the appointment of a state commissioner and to have the State take charge of our highways.

The road system should receive more attention in our Subordinate Granges, and we would recommend to their careful consideration, "The Gospel of Good Roads," a letter to the "American Farmer," by Isaac B. Potter, and from which we have secured valuable thoughts for this paper. We believe that our State should follow the example of other countries and aid in the improvement of our roads both by legislation and money.

We invite your attention to a few facts. The government of France has adopted an honest principle of state craft by doing something from year to year in behalf of the farmers. It proceeds from the theory that these roads are the property and care of all the people; that they are a public necessity and one of the institutions of the government; that the farmers alone should not bear the burden of making and repairing these lines of travel which reach from country to town.

Better roads would put the farmer into quick communication with the town and make rural life more attractive and help to solve the deserted farm problem. The improvement of the roads adds to the money value of the land.

Why have the railroads constantly improved their road-beds? The cost of running a railroad line is decreased by every improvement which tends to lessen grades and make the track smooth and hard. The practical conclusions are, a good road-bed pays; it saves power, shortens distance and time, increases speed, insures comfort and safety, and is, whatever way you state it, a good investment. The wagon in which you haul your load to market bears the same relation to the road that the railroad car bears to the steel track.

The great volume of internal trade in every State is the common road trade, and exceeds by millions the entire carrying trade of the railroads. The best roads are made for all time, are kept in repair at half the cost and labor expended on the average dirt road of this country, and farmers living along such a line are happy that they are every day and every way in touch with the great world of business and society. We should look out for the short haul rather than worry about the long haul, and especially the haul to our railroads. By "organized improvement craze," in a county in New Jersey, the increase in land values brought about in Union county, N. J., alone, would pay six times over the cost of every foot of stone road put down in the State. It is right that the state government should take care of the main roads, just as the state governments care for the main roads in other countries. Another thing, it is eminently right that the next generation should pay something toward the expense of constructing these roads. Your children and grandchildren will enjoy the benefit of these roads, and their property will be made valuable by constructing them.

Insist that the main lines be reconstructed and kept in repair at the expense of the State at large, instead of a tax directed at the farmers alone. The people of this country are paying \$140,000,000 every year to support the common

schools, and about \$45,000,000 of this sum are wasted because more than 30 per cent of the pupils are kept out of school, mostly on account of bad weather and bad roads. The farmers are bearing the greatest proportion of this loss, and a few miles of better roads in each county would tend to even up matters a little.

In 1888, the Commissioner of Agriculture said: "The common roads of the country are the veins and arteries through which flow the agricultural productions and the commercial supplies, which are the life-blood of the nation, to those ducts of travel and transportation—the railroads of the country. While our railway system has become the most perfect in the world, the common roads of the United States have been neglected and are inferior to those of any other civilized nation in the world. They are deficient in every necessary qualification that is an attribute to a good road."

The reform must come from the people, and most of all from the farmers. It is a reform that benefits all and injures none; makes you broader and better in your person and in your possessions; helps and hastens the happiness of your family; shields and saves the patient friend that drags your wagon so many miles from year to year; puts you on better terms with yourself and all mankind, and leaves you wondering what sort of a farmer that was who lived and labored in a sea of mire. It is a reform that is now at the threshold of your State, and one that will respond to your feeblest invitation.

Fred H. Smith, chairman of the committee on Coöperation, submitted the following report:

REPORT OF COMMITTEE ON COÖPERATION.

BY FRED H. SMITH.

It is difficult to present to this body any new thought on the subject of coöperation. The ablest writers of the day have given it their attention; practical men have presented their views; it has been discussed in our Granges, our papers

and magazines, and the outcome of the whole matter seems to be that coöperation is a necessity to every vocation, more particularly to this of ours. The Grange is the grandest coöperative body in existence, and has done much to elevate and encourage humanity. Who can measure the great good it is doing in our families and communities, bringing, as it does, an isolated people together for mutual benefit and improvement? How necessary is perfect unity of effort to bring about the best results.

It needs a liberal education in our Grange work to enable us to rightly understand how to coöperate, and it is almost discouraging, at times, to note the unwillingness of our members to unite even to protect their own interests. The social, moral, and educational features of the Grange, are the most vital and important, and yet, when farmers meet in organized capacity, there should be purposes of a business nature, something to benefit us financially.

Those Granges that are the most active in coöperative business are the strongest in every point. And this is as it should be, as it carries out the spirit as manifested in the Declaration of Purposes, which teaches that "we meet together, talk together, work together, buy together, sell together, and, in general, act together for our mutual protection and advancement as occasion may require."

Your committee earnestly recommend that our State Grange take action, as many other States have done, in negotiating or contracting with wholesale houses to furnish goods to Subordinate Granges at wholesale prices. We trust that coöperation may grow until we have a perfected system of disposing of our staple products to the best advantage. We would recommend to our Subordinate Granges the careful consideration of the Rochedale system of coöperation, which has been in successful operation in England for the past fifty years. From small beginnings it has grown to mammoth proportions, doing a business of \$200,000,000 annually, at a saving to its members of \$18,500,000 annually. This system was introduced and perfected by the working classes, and demonstrates that in

union there is strength. By this system a kind of exchange can be established in town, county, and state, through which farmers may not only buy their supplies, but sell their products. It provides its own capital, is its own savings bank, insures its own permanency and returns to Patrons every cent of profit above the actual cost of handling the goods. The capital stock may be divided into shares of, say, five dollars each. The stockholders elect a board of directors to manage the business. Retail prices are the same to all, members and outsiders; but a member, when purchasing, gets a credit card for the full amount of discount allowed on the goods, while non-members get credit for only one half as much discount. What has been done in England can as well be done here, and with far better facilities. Perhaps the most practical system at the present time would be the "trade card" system. Each member in good standing is furnished with a card, on presentation of which at any of the "Grange houses" (generally wholesale houses in each line of business, who are under contract with the State Grange as to terms, etc.), get their goods at from ten to fifty per cent discount, thus enabling the small purchaser to obtain at least wholesale rates. The merchants are well satisfied with this concentrated, safe cash business.

Grange cooperative fire insurance has lifted a great burden from the farming community, enabling them, at less than one half the former rates, to have their property safely insured. We bespeak the patronage by our members of the New Hampshire Patrons' Relief Association, deeming it to be a reliable means of protection, and would suggest that a knowledge of its workings be more widely disseminated among our Subordinate Granges.

Our State, which has made such commendable progress should not allow our sister States to outstrip us in practical coöperation, but rather let us unite to make it a prominent feature of our Grange work.

Your committee earnestly recommend that a committee be appointed by the State Grange at its present session, to devise

some means of practical coöperation in buying and selling, to report at our next annual meeting.

Worthy Lecturer Whitehead entertained the Grange with interesting and instructive remarks, with his accustomed earnestness and eloquence.

On motion of Brother Pettee, it was voted that we extend to Brother Whitehead our hearty thanks for his attendance at this session, and for the helpfulness and encouragement the Order has received from him at this time.

The Grange was then closed in form by the worthy master.

THIRD DAY.

The Grange assembled at 9 o'clock and was opened in due form. The roll was called and a quorum found present.

The reading of the minutes was dispensed with.

The following telegram was read and greeted with applause :

SKOWHEGAN, Me., December 16, 1891.

To the New Hampshire State Grange:

The Patrons of Pine Tree State send their warm congratulations to their brothers and sisters of New Hampshire, and desire to give the information that the annual meeting is full of enthusiasm and good cheer, and is represented by the largest attendance of members that ever assembled on any similar occasion.

M. B. HUNT,

Master Maine State Grange.

The following resolution was introduced by Past Master Wason, and referred to the committee on Good of the Order :

WHEREAS, This organization recognizes the tendency to concentrate population, wealth, and social attractions in our larger towns as one of the influences which is operating to the disadvantage of the rural farming districts, and that one important object of our efforts is to counteract this tendency, by the improvement of religious, educational, and social advantages in those sections of our State which are removed from the attractions of the large centres of population ; therefore, be it

Resolved, That we cordially approve of the legislation recently enacted, which provides for the appointment of a library commission, and furnishes a small but wholesome stimulus for the establishment of free public libraries in those towns which do not already possess them, wherever the local demand for such institutions meets the reasonable requirements of the state law.

Resolved, That we commend this subject to the consideration of the Subordinate Granges, as one which presents an opportunity for greatly improving the educational advantages now existing, by supplementing the work of the church, the press, and the public school, with the free public library.

Resolved, That we respectfully suggest to his excellency the governor and the honorable council, that in the constitution of the library commission, some representation of those who are engaged in the occupation of agriculture would, we are convinced, aid in directing this movement in the proper channels, and greatly enhance the benefits which may be expected from a judicious administration of this law.

Mrs. G. A. Wason, of New Boston, chairman of the special committee on Music, read the following report, which was accepted and adopted :

REPORT OF COMMITTEE ON MUSIC.

BY MRS. G. A. WASON.

Worthy Master :

Your committee on Music would present the following report :

Plato said : " Musical training is a more potent instrument than any other, because rythm and harmony find their way into the secret places of the soul, imparting grace, and making the soul graceful of him who is rightly educated ; and also because he who has received this true education of the minor being, will most shrewdly perceive omissions or faults in art and nature, and with a true taste ; while he perceives and rejoices over, and receives into his soul the good, and becomes noble and good, he will justly blame and hate the bad, now in the days of his youth, even before he is able to know the reason why, and when reason comes he will recognize and salute

her as a friend with whom his education has made him long familiar."

If this sentiment of the great philosopher is true, it is worthy of careful thought and consideration. To me, the more I have thought of it the more have I become convinced of its truth and beauty; and we feel sure to everyone who reads this sentiment, will come the conviction that Plato uttered a great truth. If this training is such an important part of a true education, shall we not, as an Order, encourage the study and practice of music in our Granges as well as our homes, that our sons and daughters and the older members of the family may be well equipped in every way for the duties and pleasures of life.

We are aware that many are not gifted with a musical talent, yet very few people we find but enjoy music, and in whose soul there is not a chord responsive to the strains of sweet music. Can you imagine a heart so cold that it is not touched, and his soul stirred within him as, far from home and native land, he hears his national hymn of "Home, Sweet Home" borne to his ears? We have all heard of the gambler in a den—far out on our Pacific coast—who, in the midst of his revelry, heard a sweet voice singing "Rock of Ages." He listened, as the all unconscious singer sang verse after verse. When the singing was done he threw down his cards, saying: "My mother used to sing that hymn in my childhood, when I was pure and good. I will never gamble again." And from that hour he was a new man.

Truly has Longfellow sung:

"Music is the prophet's art;
Among the gifts that God has sent,
One of the most magnificent."

We would wish and recommend that music have a prominent place in our State and Subordinate Granges.

We have known instances where meetings would have been worse than a failure without the aid of music. It holds a place nothing else can fill. To be able to play and sing

well that we may entertain those who listen, we need instruction and much practice. In our Subordinate Granges we may well devote a part of an evening now and then to music, if for no other reason than to become familiar with the songs of our Order. An evening once in a month, or less often, wholly devoted to some great master, would give us much information. Have a sketch of his life and the history of some of his compositions with the rendering of selections from them.

A fifteen-minute rehearsal of our songs for initiation, every meeting, we feel sure would improve the service very much, and make it much more impressive. Just here we want to urge that music be never neglected during installation exercises. It adds greatly to the beauty of our work as well as relieves the feelings of candidates as they pass to officers and receive their instructions. By all means have either instrumental music or singing during these services. Provide plenty of books, that all who can may join.

We would like to impress upon all the importance of quietly listening during the exercises and especially during singing. I have been in meetings where there was continual whispering and even loud talking. If those who do not enjoy it, would just remember that someone else may care to hear, they would surely confer a great favor upon those who wish to hear, and also on those who are trying to entertain. The days of the old-time singing school are in most towns becoming a thing of the past. For our rural communities they accomplished a great deal of good. Many noted singers of to-day will date their first start toward success to the country singing school. It seems to us the Grange might well take up this work which would be a great educator for the younger members, and to the older members a means to keep up their practice. A Grange, or several Granges, might secure a first-class teacher, and have one evening a week devoted to each Grange; have instruction in the rudiments—chorus and glees—singing from our new Grange melodies; also take up a little classical music now and then. A little

time spent in this way with the old masters will help us all to understand and appreciate such music when we hear it in our large cities.

We need, as Patrons of Husbandry, to utilize every means within our reach that will educate and ennoble our lives; that in our daily work upon the farm or in the home, we may be able to enjoy and appreciate all the beauty and grandeur Nature has lavished so profusely in the hills, valleys, and mountains of our own beloved State. Thus shall we be able to see and feel the touch of the Infinite in our daily contact with Nature, leading us to be nobler men and women, able to discern

“ Music in all growing things,
And underneath the silky wings
Of smallest insects there is stirred
A pulse of air that must be heard —
Earth's silence lives and throbs and sings.”

AFTERNOON SESSION.

The Grange reassembled at the expiration of recess, and after examination work was resumed.

C. P. Farley, chairman of the committee on Master's Address and Division of Labor, read the following report:

REPORT OF COMMITTEE ON MASTER'S ADDRESS AND DIVISION OF LABOR.

BY C. P. FARLEY.

Worthy Master and Patrons:

Your committee on Master's Address and Division of Labor offer the following report:

We have carefully considered the master's address, and regard it as an able and comprehensive document, well worthy the consideration of every Patron of Husbandry in New Hampshire. We recommend that portion in regard to the increased membership, to the entire Order in this State and request their hearty coöperation for continued success; that

portion in regard to the Grange Mutual Fire Insurance Co., to every Patron in the State, and would recommend every Grange, who has not, to at once elect an agent; also, that relating to the Patrons' Relief Association, to the consideration of every Patron; that portion in regard to deputy inspection and organization, to the committee on Good of the Order; local taxation, to the committee on Finance; College of Agriculture and Weather Bureau, to committee on Agriculture; free mail delivery and collection, to committee on Resolutions; Pomona Granges and Woman's Work, to a special committee consisting of masters of Pomona Granges and their wives; Grange Press, to committee on Publications; remarks in relation to Grange Temple, to executive committee; deceased membership, to the special memorial committee.

All of which is respectfully submitted.

E. J. Burnham, chairman of the committee on Publications submitted the following report, which was adopted:

REPORT OF COMMITTEE ON PUBLICATIONS.

BY E. J. BURNHAM.

Your committee on Publications submit the following report:

Reading serves two important purposes — it stores the mind with knowledge and stimulates thought. Reading and study, therefore, must always be held of the greatest importance in an organization like the Patrons of Husbandry, one of whose fundamental principles is the getting of wisdom.

The farmer, by the nature of his calling, has, during several months of the year, an excellent opportunity for reading and study. It is, then, every way desirable and, indeed, imperative, that he should supply himself and his family with good books and good newspapers. In the selection of these it is neither necessary nor desirable that he should confine himself to those publications alone which treat of his own vocation. The farmers, of all the men in the world, should have a broad

and all-around store of information. To this end, while generously patronizing those newspapers which specially champion the cause of the farmer and of the Grange, he should add others as he may be able, not forgetting at least one for the good wife and the children.

The time has come, when if the farmer would keep fully informed on the course of events, he must have access to the daily newspapers, and to this end the Grange should earnestly support and urge the movement already inaugurated for the extension of the free-delivery system, thus placing a daily mail and a daily newspaper within the reach of those who have long borne their full share of taxation without receiving an equal and just share of advantage from public expenditure.

The Grange library is a feature of Grange work that should not be overlooked. Your committee believes that it should be entirely practicable for each member of every Subordinate Grange to contribute one volume yearly to the Grange library. In this way, in a single year, the members might have the reading of from fifty to one hundred new books, without assuming a burden that would be at all heavy in proportion to the benefit to be derived therefrom. The Grange library, also, should contain copies of the elaborate and costly works now issued by the government. Many of these are of great value to the farmer, are prepared with special reference to his wants, and may be obtained without expense through the congressmen from the district or one of the senators from the State.

In a word, the Patrons of Husbandry, as active, progressive members of the community, should exert themselves in all practical ways to fill their homes with good literature, not for themselves only, but for their wives and children and all who may be dependent upon them.

George Farr presented the following report of the committee on Agricultural College and Experiment Station :

REPORT OF COMMITTEE ON AGRICULTURAL COLLEGE
AND EXPERIMENT STATION.

BY GEORGE FARR.

Worthy Master and Patrons :

The committee appointed to visit the Agricultural College and Experiment Station beg leave to submit the following report :

By invitation of Professor Whitcher the committee met at Durham, October 19, and inspected the Thompson farm, where the College and Experiment Station are to be located in the future. We found the farm very much "run down," but the location admirable. The college buildings are to be located on a commanding eminence and the Experiment Station on another eminence about thirty rods west of the college leaving ample space for the other buildings that may be required between the College and Experiment Station.

We found, on the farm, a diversified soil. A large portion of the tillage land is meadow, that, with proper drainage and Professor Whitcher's superintendence, will be found to be well adapted to experimental farming and be made to produce large crops of grain and grass.

We also inspected a grove of pine timber of seventy acres, which Professor Whitcher assured us had been estimated by an expert lumber dealer to be worth on the stump \$17,000. We certainly think very few lots can be found in the State to compare with it. We also noticed several shag bark walnut trees on different parts of the farm, which suggested the idea that two or three acres of the farm be planted to walnut and chestnut trees for the benefit of the future boys and girls who may attend the college.

We found the foundation of the barn nearly ready for the sills. The location for the barn we think is a good one. In the construction of the barn, the plan is to drive in with hay or grain on the top floor and tumble down instead of pitching up as at the Hanover barn. If your committee were to criticise anything we saw at the Durham farm, it would be the pro-

posed water supply. We visited the place where the contemplated supply is to come from and found it to be a small brook running through a meadow; when this is dammed to a sufficient height the water will flow over several acres, which must be thoroughly cleaned out, before the water could be considered suitable for use. Professor Pettee was very confident the supply would be ample, and the quality good. We think so, too, provided the above suggestions are complied with.

From Durham we went to Hanover. We visited the different departments of the college. In the new department of entomology, we found Professor Weed, a young man, who is evidently the right man to be at the head of that department. Professor Weed has recently published a book on "Insects Injurious to Vegetation," with the remedies, a book that every farmer in New Hampshire should have.

We next visited the mechanical building, where we found many evidences of mechanical skill displayed by the students, and we are pleased to say that much more attention will be given to that department when the college is located in Durham, as ample buildings will be provided.

We next visited Professor Wood at the dairy rooms. There we saw the separator taking in milk at top and sending cream out of one tube and skimmilk out of another. We found Professor Wood's room in good order, clean and sweet. At the Wheelock house we tested the butter from the Experiment Station and found it No. 1.

We next visited Professor Lawson, where we saw through the microscope, microbes, and bacteria, etc. A small speck taken from a rotten potato on the point of a needle, and placed under the glass, revealed enough bacteria to rot an acre of potatoes in a few days, as it expands and increases with astonishing rapidity. We also saw the effect of apple and pear scab, etc., etc. Had we time and space we would give particulars. In due time all will come out in the bulletins.

We next visited the barn and stock. We found the barn full of hay, about as high up as the naked eye could reach, the silo full, stock all looking well. The stock consists of

Jerseys, Ayrshires, Durhams, and Holsteins, about equally distributed among those breeds. We consider the farm at Hanover in good condition.

The following is the amount and value of crops from the Hanover farm this year :

Hay, 100 tons, value	\$2,000
Oats, 800 bushels, value	400
Straw, 25 tons, value	150
Ensilage, 250 tons, value	750
Corn stover, husked, value	50
Millet, cut, 20 tons, value	100
Potatoes, value	75
Total	<hr/> \$3,525

Crops on the Durham farm :

Hay sold in the field	\$160
Apples	200
Total	<hr/> \$360

The above figures explain in eloquent language, the difference between a farm well cultivated and one well neglected. We are confident under Professor Whitcher's care for a few years the Durham farm will make an entirely different showing. We, as farmers, must not expect too much from the Durham farm for some years.

Your committee is satisfied that in a very few years the Agricultural college at Durham will be second to no other similar institution in any of the States. In this connection, we would urge the farmers of New Hampshire to send their sons and also daughters to the college, for if farmers expect to fill the halls of legislation they must fit themselves for all the various duties pertaining thereto.

Alonzo Towle, chairman of the committee on Agriculture, submitted the following report, which, on motion, was adopted :

REPORT OF COMMITTEE ON AGRICULTURE.

BY ALONZO TOWLE.

Your committee beg to submit the following report. First, we congratulate the farmers of New Hampshire on the bountiful harvest of 1891, and also, that the market price for the same has been so well sustained. In the aggregate there are some unpleasant features connected with our present state of agriculture.

It is a sad fact that statistics cannot be furnished of the amount of food including corn, oats, shorts, cotton-seed meal, gluten meal, and oil cake annually imported. An approximate estimate counts the costs at millions of dollars. Millions more are annually paid out for commercial fertilizers, and still additional millions for importing live stock, principally horses. We supply our home market, to be sure, with fruit, eggs, and poultry, but our exports of agricultural products, with the single exception of dairy products, amount to but a trifle.

So long as this state of things continues, New Hampshire must necessarily sustain a low rank as an agricultural State.

But there is another side, presenting a brighter outlook. According to the recent census report, the average yield per acre throughout the State was on the increase. The average yield per cow of dairy products is greater, and if the bank deposit is a summary of our prosperity, New Hampshire is no longer waning, but has raised her standard by \$6,000,000 over and above that of any preceding year.

Our chief revenue now is in our summer boarding, our forest productions, and manufactures. Hence those industries should be encouraged. The efforts of the commissioner on abandoned farms have been in the direction to increase the summer boarders, and should be sustained. The relation of future demand and supply of timber should be carefully studied that the best means of perpetuating the same may be devised. And we should ever be ready to lend a helping hand to manufacturing of every kind.

We commend the action of our cattle commissioners in

purifying our breeds and preventing the further importation of diseased animals. Recent legislation has come to our assistance and may become a prominent factor in our future prosperity. We particularly indorse the idea of co-education in school and college, referred to in the worthy master's address.

Our great money drainage in consequence of importation of cereals should be met by stimulating the farmer to cultivate more acres and to realize by intensive culture a greater yield per acre. By intensive agriculture soil is made fertile, whatever it originally may have been. By this means the Channel Islands have been made to produce an annual yield to the amount of \$250 to each acre of the surface of the island. And who can tell the capacity of New Hampshire's soil? Much has been and is being done in this direction through the Experiment Station, the Board of Agriculture, and the Grange. These three should have our undivided and combined support.

Who can tell what agencies yet hidden may come to our support? Who can tell what electricity may accomplish in the line of agriculture? Who can tell what treasures lie buried in our granite hills, stored up like the oil and coal beds of Pennsylvania for our coming needs. One fact is comforting, that Mother Earth has always unlocked and given up to us supplies adapted to our needs. And if we will exercise that faith which is requisite for a good Patron, and persevere in utilizing the forces already at our command, as the sons and daughters of New Hampshire have always lived in the past, so will they ever continue to live on and on.

George F. Pettingill, chairman of the committee on Education, submitted the following report, followed by its adoption :

REPORT OF COMMITTEE ON EDUCATION.

BY GEO. F. PETTINGILL.

We would say that we believe in education. We care not what a person's parentage is, or what his environments are, or what his intellectual capacity may be; we believe in edu-

cating that person in proportion to the extent he manifests a desire for learning, and is susceptible of receiving it, whether it be an agricultural, scientific, theological, classical, medical, or low education. For we educate ourselves that we may be the better able to meet the responsibilities of life. Education is something nothing can alienate — at home, a consolation; abroad, an introduction. No matter what position a man or woman may occupy, to be successful they must be educated. We do not say a classical education is absolutely necessary, but we do claim it is vastly important, for no profession — scarcely a vocation of any kind — can be successfully conducted without classical learning. What was a brilliant education twenty-five years ago would be, to-day, but a poor apology for the young man or young woman in fulfilling the duties that society and business demand of them. In this glorious land of the free the avenues to education are open to all classes, irrespective of birth or sex. But let me say to you, brother and sister Patrons, that the best seminary that can open its portals to your children, can do no more than afford them an opportunity for instruction. It rests with them, yea, with you too, to see that they make the wisest and best use of their opportunities, and departing, leave behind them “footprints on the sands of time.”

Man without an education is but a reasoning savage, a splendid slave. We sometimes hear one say, the farmers are well enough, they don't need an education. But if they do not need an education, is there, can there be anything, we ask, of more importance that they do need? We would not have every boy or girl educated specifically for a farmer. If the child's inclinations lead him into some other pursuit, then educate him for whatever he chooses, if the calling is honorable and legitimate. Likewise, if those who are of doctors, lawyers, or ministers, choose a rural life, grant it; for it would be far more honorable to be a noble, progressive tiller of the soil, than to be a dishonest politician, half-educated physician, a minister without holy unction, and thus his or her life be one grand total failure. That life should

miss its aim, and not be what it was meant to be, is an awful thought, and he or she who does most to make life what God intended, fulfills best the great purpose of life. Ignorance has ever been the source of every crime; it has reared its Golgothas in every land, among every people. But education in its bold onward march is pressing like a mighty torrent against the strongholds of crime and vice, and the mightiest Gibaltars of ignorance tremble as they behold the approach of that mighty wave which will sweep it forever from the face of an enlightened land.

We congratulate ourselves to-day on the wise, judicious, and impartial manner in which our school system is conducted in New Hampshire.

The law, in the distribution of its school privileges, knows or acknowledges no inferiority of birth, wealth, or social position. It goes to the remotest hamlet, takes the child of humble parentage and obscure birth and says to it, you are equal before the law, and shall have as many weeks' school as the child of the millionaire. A law that has made it possible for every child in our own loved commonwealth to receive a good, liberal education, — should we not, we ask you, as intelligent Patrons, give it our earnest and undivided support? We commend the worthy master's position and his reference to the Agricultural college. This institution has achieved many glorious triumphs, and in almost every State to-day we find some of the products of its grand and noble teachings; but the grandest and noblest thing she ever did was when she opened her doors to the girls and said, "Come in and be educated, you are equal in intelligence to the boys of our college." It is no longer possible, under the present condition of our school system, for the large villages and cities to boast of their superfluous wealth of learning in excess of our rural homes, for the farming and rural communities have the same privileges before the law as those of great centres. But we will not dwell upon the many auxiliaries we have in our State for the maintenance of education. "There is a river the streams whereof shall make glad the City of God," and

who shall say that education is not that river, and the Grange one of its streams. The common school, the Sabbath school, all, everything that goes to widen and deepen this great highway of learning.

Let us cherish and foster these privileges vouchsafed to us by a kind Providence, and build upon them a superstructure broad enough and high enough for every man, woman, and child to stand upon and exclaim, "I came, I saw, I conquered."

A. J. Hamm presented the report of the committee on Finance, and after considerable discussion the report was adopted.

Report of committee on Claims and Grievances by F. H. Flanders, chairman, was adopted.

Report of the committee on Mileage and Per Diem by F. P. Hatch, chairman, showed the number of miles traveled by the officers and members in attending the session to be 13,124; number of days' attendance, 636½; and total expense to State Grange, reckoning two cents per mile one way, and \$1.25 for each day's attendance, \$1,058.14. This was an increase over the previous session of 3,544 miles' travel, 158 days' attendance, and \$268.42 in expense.

Worthy Secretary Bachelder presented Worthy Retiring Master McDaniel with an elegant gold watch, from friends in the State Grange, the gift being accepted with appropriate and feeling remarks by the worthy master.

On motion of Brother Hunt, it was

Voted, That when the report of the committee on Experiment Station and Agricultural college be set up for the journal, that 1,000 extra copies be printed for distribution among the various Subordinate Granges and leading farmers of the State.

Kimball Webster, chairman of the committee on Dormant Granges, presented the following report:

REPORT OF COMMITTEE ON DORMANT GRANGES.

BY KIMBALL WEBSTER.

Worthy Master and Patrons :

Your committee on Dormant Granges have considered the matter committed to their trust, and have carefully examined the eleven elaborate annual reports that have been submitted to this Grange and printed with its proceedings, since its seventh annual meeting in 1880.

Several of these reports are lengthy and comprehensive, having been prepared by some of our most able and experienced members, and seem to cover the whole ground in relation to the apparent causes, and prevention of dormancy, with many valuable suggestions for the reorganization of such unfortunate Granges.

Your committee would deem it unwise to occupy the valuable time of this meeting by submitting any lengthy report at this time, but would refer those seeking information in relation to this matter, to the reports alluded to, and also to similar reports of committees of the National Granges.

Your committee will close this report with one suggestion in addition to those contained in former reports, for the consideration of the officers having these matters in charge.

That a special deputy on Dormant Granges be appointed, to whom all such cases shall be referred; and whose duty it shall be to investigate the causes that may have led to the decline in each case, and to apply such means as he may deem most efficient, in harmony with proper regulations and instructions to be furnished by the master or general deputy of the State Grange, working through district deputies or otherwise, as may be most convenient and effective, and make report to the State Grange at its annual meeting.

On motion the report was accepted and the resolution in regard to appointing a special deputy for Dormant Granges was referred to the executive committee, with power to act.

George A. Wason, chairman of the committee on Good of the Order, presented a report as follows, which, on motion, was adopted :

REPORT OF COMMITTEE ON GOOD OF THE ORDER.

BY GEO. A. WASON.

Worthy Master :

Making this report for the good of the Order, we are not unmindful that during the last seventeen years a report has been called for by the worthy master of the State Grange and responded to, until the subject has become exhausted. Also, the surprising success the Grange has attained in the State is evidence that the right course has been pursued for the good of the Order. Surely, Patrons who have the best interest of the Grange at heart, are familiar with means used to bring about so favorable results.

But, as it is one of the essentials for the good of the Order that each member should respond to the demands of the officer in command, therefore, Worthy Master, at your request your committee will briefly make a few suggestions to the Grange for their consideration. The founders of this Order, laid for the corner-stone, agriculture. The improvement of agriculture and those engaged in the rural pursuits is the structure that has been built thereon, and not completed. Education is one of the great factors to advance agriculture, and we believe that in our march of mental discipline, the time has come to take a step in advance, and introduce into our primary schools the elementary science of practical agriculture, together with other subjects which deeply concern our welfare as citizens, such as the laws that govern trade and commerce, the great questions of political economy, farm law, parliamentary law, the elements of agriculture, science, and other kindred subjects, which will develop and discipline the reasoning powers and lead to a greater degree of original thought and make more self-reliant citizens.

Would it not be for the good of the Order that the Grange

demand text-books on these subjects to be taught in our schools, to prepare the mind for a higher training in our more advanced schools and the farmers' agricultural college?

Honesty is one of the essentials taught at the opening and closing of the Grange. But is it honest for a member after pledging fidelity to the Order to absent himself or herself from the Grange seven eighths of the regular meetings of the year? Is it honest for Patrons to attend the meeting expecting to be entertained without rendering any aid themselves? Is it honest for a member to declare his Grange a failure when from his negligence to do his duty it became so? Is it honest for a master after filling that honorable office when leaving the chair to leave the Grange also? Let us live up to the precepts taught and be honest with ourselves and the Order and success will crown our efforts for the good of the Order.

For the good of the Order it is the duty of every Patron to labor diligently to bring about these good results. To do this we must not wait for something to be done for us, but strive to do something for ourselves and others, and by working intelligently together, success is assured.

The meeting together of several Subordinate Granges to discuss subjects pertaining to the general welfare of the farmers' calling is fraught with much good. The Pomona Grange has been introduced to fill this want. But the success depends on the Patrons who make an effort to attend the meetings, also the Subordinate Granges visited. They should be as ready to receive their visiting brothers and sisters as they would an invited guest to their own houses. Let every member of the Grange visited make an effort, and, if possible, be present at the place of meeting in time to welcome their brother and sister Patrons with warm, hearty, fraternal greeting. It soon dispels the tediousness of a long, dusty ride in summer, and a cold drive in winter to attend these gatherings. When this is done by the Grange where the meeting is held it sends a thrill of life and pleasure into the exercises. The results which follow are sure to be for the good of the Order.

Your committee is aware of the fact that there are many

Granges in the State where suggestions are not needed, but for those who are less fortunate we will make a few suggestions.

Use judgment in selecting the officers of your Grange, put the right man in the right place. Select for the master a good presiding officer, one who will be punctual in attendance. Select a faithful, accurate secretary. Select the very best material you have for a lecturer, as this is the most important office in the Subordinate Grange. After the officers are elected and installed, they should meet immediately and arrange a programme for the entire year. Appoint several special committees and define their duties. Some of the committees may be for the following purposes:

Committee on Markets, to keep posted and report at each meeting of the Grange.

Committee to arrange for social entertainments.

Committee on Home and Grange Hall Adornment.

Committee on Schools and Educational Interests.

Committee to extend the circulation of the Grange press.

Many are thinking that too much of our time is taken up by giving the first evening of our session to an open meeting. Your committee is fully aware of the good these public meetings have been in the past to this Order. But the rapid growth of the Grange in the past few years has increased the business to be transacted to the extent that the time is limited to do the business as it should be done for the good of the Order. We recommend for your consideration, the addition of one day to the session, at least the year of election of officers. We further recommend that the worthy master of the State Grange notify all the members of committees of their appointment at least one week prior to the annual meeting.

Worthy Master and Patrons, we need not look farther than the principles of our Order for advice and counsel to do our duty in or out of the Grange. Prominent among these principles are these words: Faith, Hope, Charity, Fidelity. Each threads its way into individual life, as does the blood from the heart through the human system, giving life and

vigor to every part. Let these words be written on our minds and hearts in living letters, that we may carry them from our Grange hall to our homes to make them brighter and more cheerful, to our farms to make them more productive and beautiful. Carry these words into every town and hamlet of this grand old State of ours. Then shall the good of this Order of Patrons of Husbandry be seen and felt on the hillsides and valleys, in the homes of our industrious, prosperous, and happy people.

So much of the master's address as relates to deputy inspection, we recommend all Granges of the State to adopt and practice. In regard to woman's work we recommend that a special committee be appointed to advance their work, and report at the next annual meeting. We recommend that portion of the master's address, relating to Pomona Granges, to the attention of all Patrons of the State.

Your committee have considered the resolution of Brother Wason, in regard to the establishment of public libraries, and recommend its passage.

On motion of Brother Tallant it was

Voted, That the State Grange accept the invitation to be present at the laying of the corner-stone of the agricultural buildings at Durham, and that the executive committee make all necessary arrangements for the same.

On motion of Brother Patten, it was

Voted, that one thousand copies of the report of the committee on Good of the Order be printed for distribution at the time the journal is printed.

Brother C. C. Shaw, presented the following resolutions:

WHEREAS, We, members of the New Hampshire State Grange, assembled in its eighteenth annual session, learning that the National Grange, at its last annual session, voted to leave the subject of the place of holding its next annual meeting in the hands of its executive committee, and in view of the long and pleasant associations that

have existed between the two Granges, and the steadfast, moral, and financial support this State Grange has rendered to the said National Grange; be it

Resolved, that the executive committee of this State Grange, should they deem it advisable, be and are hereby authorized to invite the said National Grange to hold its next annual meeting in this State, and that said executive committee be further authorized to perfect such arrangements as may seem best calculated to render said meeting pleasant, profitable, and an honor to our Order.

Remarks endorsing the same were made by Brothers Wason, Gay, Burnham, and others, and they were adopted.

J. D. Lyman, chairman of the committee on Resolutions, presented the following report:

REPORT OF COMMITTEE ON RESOLUTIONS.

BY J. D. LYMAN.

Resolved, That we extend our thanks to the Legislature for accepting the provisions of the Thompson will, and providing for the removal of the New Hampshire College of Agriculture and Mechanic Arts to Durham to become, with the agricultural school so magnificently provided for by the late Benjamin Thompson, the great practical agricultural and mechanical school of the State, where boys shall be graduated excellent farmers, good mechanics, and well educated young men; and where the girls shall be graduated excellent housekeepers and well educated young ladies.

Resolved, That this college must be practical in its instructions and shall receive our hearty support. We also suggest the idea of having one of the professors sent to visit the similar colleges in Europe, in order to benefit our own, and that we cordially approve the idea of having an annual meeting of representatives of all our own colleges of agriculture and the mechanic arts to devise and discuss means for the improvement of those colleges and to learn from each other and to note progress.

Resolved, That whereas it costs something to carry a per-

son in the cars, if those who ride do not pay this cost it has to be taken out of some innocent party. Favoritism in business is unfair and bribery a crime.

Resolved, That the rule laid down by St. Paul to govern Christians in supporting the gospel, viz., that each should contribute in proportion as God had prospered him, is the Christian rule for citizens in paying town, county, and state expenses.

Resolved, That such a large number of the bills presented to our Legislature, affecting in a greater or less degree all the people and their industries, are referred to the judiciary committee, that committee should not be composed of any one profession, but the leading industries of the State should be represented upon it in conjunction with the ablest lawyer.

Resolved, That in our currency all dollars, so called, whether of gold, silver, or paper, ought to be practically of the same value in the hands of the people; otherwise, the wealthy individuals and corporations will be sure, through their great influence in financial affairs, to secure the more valuable dollars for their own enrichment, and compel the common people to receive the cheaper ones to their impoverishment.

Resolved, That Hon. H. W. Hatch, chairman of the committee of Agriculture in the national House of Representatives and Hon. J. M. Rusk, Secretary of Agriculture, have proved themselves friends of the farmers, and we hereby tender them our sincere thanks.

Resolved, That the condition of the Maverick Bank in Boston, and that of the late Pacific Bank in the same city, and that of a few years since at Bellows Falls, Vt., and of the unprecedented number in other sections of our country which have failed during the year, and the recent decision of the Supreme Court declaring the responsibility of bank directors, ought to compel Congress to at once revise our national banking laws, and to provide for more faithful and impartial examinations of the banks, and greater responsibility on the part of directors, and the exclusion of speculators and other

unsafe business men, as much as practical, from the management of national banks.

Resolved, That, with the present depreciated value of farms, the nation ought not to tax the people to irrigate the dry regions of the West; that should only be done, where practical, after farm lands have appreciated in value, and the necessity for more farm lands is greater than at present.

Resolved, That it is the duty of Congress to exercise its utmost powers to prevent all adulterations and counterfeiting in food, medicine, and drinks, and speculation in the same; and should do its best to prevent the people from being defrauded by the sale of shoddy and other manufactures, which are frequently bought for what they are not — and all meats packed for the home or foreign market should be carefully inspected.

Resolved, That we commend the faithful effort on the part of the State Board of Agriculture, in enforcing the oleomargarine law, and request the Board to continue constant in its enforcement.

Resolved, That we are emphatically in favor of temperance, the enforcement of the laws, and the instruction of the youth in its principles.

Resolved, That we pledge ourselves to increased energy for the upbuilding of our noble Order.

Resolved, That poor people should ride in the cars at as cheap rate as the wealthy, and that we believe that, in general, railroads should carry passengers at two cents per mile.

Resolved, That we are earnestly in favor of the greatest practical extension of the free delivery of the mails, and prefer this to a reduction of the rate of postage.

Resolved, That the Legislature, and especially the committee on Agriculture, have our thanks for its labors in favor of agriculture.

A vote of thanks was extended to the newspapers for reports of the session; to the railroads and hotels for reduced rates; to the city of Manchester for use of the City Hall, and

to various persons who had contributed to the furnishing and decorating of the hall for the meeting. C. H. Pettee presented the following resolution :

Resolved, That, in view of the great and increasing press of business at our state convention, hereafter the public meeting be omitted, and the address of welcome by the local Grange, and the response by the state master, or his representative, shall be given immediately after the organization of the Grange.

After a lengthy discussion, the resolution was referred to the executive committee, with power to act.

The following officers of the New Hampshire State Grange were installed by Retiring Master Charles McDaniel, assisted by Thomas E. Hunt, worthy master of Belknap County Pomona Grange :

Worthy Master — Nahum J. Bachelder.

Worthy Overseer — James E. Shepard.

Worthy Lecturer — Edward J. Burnham.

Worthy Steward — Ellery E. Rugg.

Worthy Assistant Steward — Howard B. Holman.

Worthy Chaplain — George W. Patten.

Worthy Treasurer — Jonathan M. Taylor.

Worthy Secretary — Emri C. Hutchinson.

Worthy Gate Keeper — Adam Dickey.

Worthy Ceres — Mrs. Nahum J. Bachelder.

Worthy Pomona — Mrs. George J. Bennett.

Worthy Flora — Mrs. Alonzo Towle.

Worthy Lady Steward — Mrs. Emri C. Hutchinson.

The worthy master made a brief address to the Grange on assuming the chair.

Remarks were made by Worthy Lecturer Burnham concerning the long and faithful service of Brother John D. Lyman, the retiring lecturer, and on motion of Brother McDaniel, a rising vote of thanks was given Brother Lyman for his efficient services as lecturer of the State Grange.

On motion of Brother Shaw, a vote of thanks was given Brother Hunt for the pleasant and efficient manner in which he assisted in installing the officers.

On motion of Brother Lyman, a rising vote of thanks was tendered Worthy Past Master McDaniel, for the very efficient services he has rendered this Grange for the past five years, as master.

On motion of Brother Hunt, a vote of thanks was tendered to all the retiring officers, also to the choir and organist.

In accordance with the resolution, the worthy master announced the following committees :

On Experiment Station and Agricultural College—George D. Epps, Francestown; John W. Farr, Littleton; B. Frank Davis, Lee.

On Woman's Work—Mrs. Sarah F. Dearborn, Pembroke; Mrs. Lizzie F. Hill, Derry; Mrs. Ella R. Merrow, New Hampton.

The worthy master also announced the following list of deputies and districts :

DISTRICT NO. 1.—H. A. Hill, Derry, for Londonderry, Hampstead, Atkinson, Granite State, Massabèsic, Hudson, Junior, and Nashua Granges.

DISTRICT NO. 2.—F. P. Wentworth, Rochester, for Crown Point, Bow Lake, Cocheco, Patuccoway, Jeremiah Smith, Scammell, Pequawket, Deerfield, and Nutfield Granges.

DISTRICT NO. 3.—James H. Tripp, Short Falls, for Rochester, Catamount, Pembroke, Chichester, Candia, and Hooksett Granges.

DISTRICT NO. 4.—T. E. Hunt, Lakeport, for Laconia, Crystal Lake, Winnipесаaukee, Merry Meeting, Barnstead, Crescent Lake, Lawrence, and Harmony Granges.

DISTRICT NO. 5.—Fred H. Smith, Meredith, for New Hampton, Newfound Lake, Mount Belknap, Mount Israel,

Olive Branch, Campton, White Mountain, and Pemigewasset Granges.

DISTRICT No. 6.—John C. Morrison, Boscawen, for Capital, Rumford, Warner, Merrimack River, Franklin, Friendship, Loudon Surprise, Highland Lake, and Black-water Granges.

DISTRICT No. 7.—T. J. Courser, Warner, for Daniel Webster, Ezekiel Webster, Bradford, Sutton, Bartlett, Union, Kearsarge, and New London Granges.

DISTRICT No. 8.—H. O. Hadley, Temple, for Advance, Watatic, Fruitdale, Hollis, Granite, Peterborough, Pinnacle, and Prospect Granges.

DISTRICT No. 9.—T. H. White, Harrisville, for Monadnock, Marlboro, Cheshire, John Hancock, Granite Lake, Forest, Honor Bright, Ashuelot, and Richmond Granges.

DISTRICT No. 10.—Oscar J. Wilson, Gilsum, for Pista-reen, Spafford, Great Meadow, Walpole, Surry, Warren Pond, Excelsior, and Lovell Granges.

DISTRICT No. 11.—Almon Twitchell, Richmond, for Marshall P. Wilder, Fitzwilliam, Wantastiquet, Jaffrey, Trojan, Arlington, Golden Rod, Lincoln, and Silver Lake Granges.

DISTRICT No. 12.—G. F. Farley, Goffstown Centre, for Amoskeag, Uncanoonuc, Narragansett, Thornton, Souhegan, Joe English, Wyoming, Stark, and McClary Granges.

DISTRICT No. 13.—Bela Graves, Unity, for Claremont, Cornish, Sullivan, Sunapee Lake, Sunapee Mountain, and Cold River Granges.

DISTRICT No. 14.—C. H. Dutton, Bennington, for Valley, Bear Hill, Oak Hill, Wolf Hill, Antrim, Miller, and Greenfield Granges.

DISTRICT No. 15.—H. F. Hoyt, Etna, for Lebanon, Mont Calm, Indian River, Mascoma, Morning Star, Eureka, Blazing Star, Meriden, and Grafton Star Granges.

DISTRICT No. 16.—George Farr, Littleton, for Lancaster, Mount Washington, Star King, Monroe, Ammonoosuc, and Riverside Granges.

DISTRICT No. 17.—J. L. Pendexter, Intervale, for Freedom, Carroll, Ossipee Mountain, Tuftonborough, Lake Shore, and Chocorua Granges.

No further business appearing, the Grange was closed in due form at 5 o'clock.

E. C. HUTCHINSON,
Secretary.

LIST OF POMONA GRANGES AND THEIR OFFICERS, 1892.

No.	NAME.	LOCATION.	MASTER.	LECTURER.	SECRETARY.
1	Hillsborough County.	Milford.	James Sheldon.	E. A. Robbins.	D. G. Roberts.
2	Eastern New Hamp.	Strafford.	Horace A. Hill.	James M. Hayes.	Charles F. Foss.
3	Merrimack County.	Concord.	John C. Morrison.	J. L. Gerrish.	Mrs. Caroline F. Emery.
4	Belknap County.	Laconia.	T. O. Taylor.	Mrs. E. M. Hunt.	F. D. Gilman.
5	Northern New Hamp.	Littleton.	George Farr.	Mrs. Charles Aldrich.	George E. Walker.
6	Cheshire County.	Keene.	James Burnap.	Mrs. Edith E. French.	Mrs. Ella J. Farwell.
7	Mascoma Valley.	Lebanon.	Charles McDaniel.	H. T. Webster.	David Noyes.
8	Carroll County.	Centre Ossipee.	Alonzo Towle.	S. A. McDaniel.	Charles E. Blanchard.
9	Sullivan County.	Newport.	Bela Graves.	George P. Dickey.	Mrs. Rose E. Purington.
10	West Rockingham.	Hamstead.	H. C. Sanborn.	" " " "	C. H. Brown.
11	East Rockingham.	Exeter.	H. Scammon.	" " " "	Charles Flanders.
12	Suncook Valley.	Pembroke.	C. B. Rogers.	" " " "	Miss Fronte G. Russ.

LIST OF SUBORDINATE GRANGES AND THEIR OFFICERS, 1892.

No.	NAME.	LOCATION.	MASTER.	LECTURER.	SECRETARY.
1	Gilman.	Exeter.	Sperry French.	H. Scammon.	Miss Frances E. Smith.
4	Merrimack River.	Canterbury.	Walter M. Small.	Charles W. Emery.	Miss Kate E. Gleason.
5	Lovell.	Washington.	Shubael W. Hurd.	Mrs. Clara M. Hurd.	Mrs. Ida M. Brockway.
7	Granite.	Milford.	Edward B. Hall.	William S. Keith.	George W. Colburn.
8	Sullivan.	Newport.	Homar F. Wright.	George F. Whitney.	George W. Hurd.
9	Claremont.	Newport.	Erastus Reed.	Herbert B. Converse.	Ora D. Blanchard.
10	Souhegan.	Amherst.	Harry A. Wilkins.	Clarence L. Trow.	Henry C. Day.
11	Hudson.	Hudson.	Kimball Webster.	George H. Abbott.	Miss Gertie A. Merrill.
12	Hollis.	Hollis.	Walter L. Moar.	Mrs. A. A. Paul.	W. L. Marshall.
13	Nashua.	Nashua.	Albert H. Bailey.	Elijah A. Robbins.	Mrs. Clara A. Fletcher.
18	Pinnacle.	Lyndeborough.	William C. Wilder.	Mrs. S. Kate Swinington.	John H. Goodrich.
19	Cold River.	Acworth.	Will L. Gowen.	Miss Mamie J. Dickey.	Mrs. Marv E. Barney.
20	Advance.	Wilton.	Perley J. Abbott.	James E. Gray.	Mrs. A. D. Abbott.
21	Prospect.	Mont Vernon.	John Thorpe.	Mrs. Ellen F. Stinson.	Mrs. Annie E. Perham.
23	Greenfield.	Greenfield.	John T. Robertson.	Mrs. John Fletcher.	D. W. Burnham.
25	Cornish.	Cornish.	James W. Fitch.	F. H. Weld.	Mrs. Albert Weld.
31	Thornton.	Merrimack.	A. A. Piatts.	Mrs. Clarie Parker.	Miss Mabel Lowell.
32	Oak Hill.	Francetown.	George D. Epps.	Mrs. Rose Prescott.	Edson H. Patch.
33	John Hancock.	Hancock.	Clarence H. Ware.	A. Clifton Ware.	Miss Ella C. Ware.
34	Miller.	Temple.	Arthur Rockwood.	Miss Helen W. Hadley.	DeWitt C. Bragdon.
35	Peterborough.	Peterborough.	Ezra M. Smith.	Mrs. E. Maria Hadley.	Mrs. Lizzie Tarbell.
36	Watatic.	New Ipswich.	Edgar F. Sanger.	Mrs. Alice A. Willard.	C. A. Preston.
37	Nutfield.	Derry.	Alvin J. Seavey.	Miss Helen E. Alexander.	Miss Anna E. Barrett.
39	Bear Hill.	Henniker.	Arthur C. Graves.	Mrs. Susan M. Cogswell.	Mrs. Charlotte M. Wilkins.
40	Uncanoonuc.	Goffstown.	G. B. Stevens.	George Pattee.	Fred K. Hazen.
41	Wolf Hill.	Deering.	George McNeil.	Mrs. Calista J. Wilkins.	Mrs. Lizzie G. Locke.
42	Stark.	Dunbarton.	Phlander M. Lord.	Mrs. Letitia M. Jameson.	Miss Ethelyn L. Jameson.
44	Londonderry.	Londonderry.	Charles G. Pillsbury.	James G. Stone.	Henry J. Caldwell.

46	Narragansett.	Bedford.	William F. Connor.	Frank E. Manning.	E. W. Stevens.
47	Warren Pond.	Alstead.	Frank M. Forristall.	Miss Mary Alden.	Mrs. C. D. Smith.
48	Lancaster.	Lancaster.	Zeb Twitchell.	Mrs. Louise E. Hartford.	W. R. Stockwell.
49	Monroe.	Monroe.	N. T. Bolton.	S. W. Miner.	R. A. Moore.
50	White Mountain.	Littleton.	J. W. Farr.	Mrs. J. A. Clark.	George E. Walker.
51	Winnepesaukee.	Meredith.	Fred H. Smith.	Mrs. Eva S. Blake.	D. L. Alexander.
52	Mount Belknap.	Gilford.	John Y. Jewett.	Thomas E. Hunt.	Chas. F. Morrill.
53	Joe English.	New Boston.	Harry H. J. Read.	Miss S. Olive Marden.	Miss Cora L. Fiske.
54	Wyoming.	South Weare.	Jason P. Dearborn.	Eben L. Paige.	Mrs. Emma W. Nichols.
55	Ammonoosuc.	Bath.	Moore R. Tewksbury.	John A. Noyes.	Dennis E. Lawson.
56	Union.	Hopkinton.	George O. Moulton.	Mrs. Emma A. Foss.	Mrs. Catherine S. Connor.
58	Bradford.	Bradford.	Jonathan Merrill.	A. P. Howe.	Mrs. Helen H. W. Felch.
60	Grafton Star.	Hanover.	J. M. Fuller.	F. W. Morse.	C. L. Parsons.
62	Morning Star.	Lyme.	Charles H. Dimmick.	Mrs. Lucinda D. Amsden.	George S. Mayo.
63	Valley.	Hillsborough.	John Goodell.	Mrs. Jennie E. Vickery.	Mark M. Hadley.
65	Crown Point.	Strafford Corner.	Stephen B. Jeness.	Fred T. Stanton.	Charles F. Foss.
68	Mascoma.	West Canaan.	Herbert L. Webster.	Mrs. Julia A. Daniels.	Mrs. Ruth K. Jones.
69	Eureka.	Grafton.	George E. Whitford.	George S. Barney.	B. Franklin Williams.
70	Mont Calm.	Enfield Centre.	George F. Pettegill.	Mrs. Carrie M. Clough.	Henry A. Little.
71	Blazing Star.	Danbury.	Albion W. Braley.	Miss DeEtte I. Bullock.	Mrs. Lillian S. Butrick.
72	Indian River.	Canaan.	Alvin Davis.	C. O. Barney.	A. M. Shackford.
74	Deerfield.	Deerfield.	William F. Chase.	George H. Towle.	Arthur M. Chase.
79	Olive Branch.	Hebron.	Hiram H. Worthley.	George B. Barnard.	David P. Hardy.
80	Bow Lake.	Strafford.	William A. Brown.	D. S. Woodman.	J. F. Hanson.
81	Cocheco.	Dover.	Hiram S. Osborne.	Mrs. L. P. Wentworth.	James M. Hayes.
83	Spaiford.	(West) Chesterfield.	H. B. Morgan.	C. E. Snow.	H. G. Smith.
86	Rochester.	Rochester.	Alvah E. Otis.	Frank P. Wentworth.	Charles W. Dame
87	Kearsarge.	Wilnot.	Fred W. Roly.	Mrs. L. M. Nelson.	Fred E. Longley.
88	Highland Lake.	East Andover.	F. H. Flanders.	George H. Haley.	Mrs. E. M. Tuttle.
90	Warner.	Warner.	Walter M. Flanders.	Miss F. M. Flanders.	Miss Jennie S. Perry.
91	Sutton.	Sutton.	William H. Chadwick.	Mrs. Eliza L. Fowler.	Daniel L. Powers.
93	Campton.	Campton.	T. S. Pulsifer.	Mrs. Esther M. Bartlett.	Mrs. Almira H. Merrill.
94	Ezekiel Webster.	Boscawen.	George W. Fisher.	Mrs. Elvira P. Carter.	Miss Minnie Morrison.

LIST OF SUBORDINATE GRANGES AND THEIR OFFICERS, 1892. — *Continued.*

No.	NAME.	LOCATION.	MASTER.	LECTURER.	SECRETARY.
95	New London.	New London.	W. M. Knowlton.	Mrs. Lucia N. Shepard.	Edgar F. Sargent.
96	Forest.	Stoddard.	William H. Chapin.	Miss Flora M. Chapin.	B. H. Griffiths.
97	Catamount.	Pittsfield.	Mrs. Sewell N. Lougee.	Mrs. Arthur Sanborn.	Miss Jennie Cowey.
98	Antrim.	Antrim.	William A. Holt.	Ira P. Hutchinson.	Miss Linda Hutchinson.
99	Harmony.	Sanborn.	George B. Lane.	Freeman D. Gilman.	Thomas O. Taylor.
100	Daniel Webster.	Webster.	Henry Dodge.	Daniel G. Holmes.	Miss Minnie P. Wadleigh.
101	Crystal Lake.	Gilmanton.	Elbridge G. Clough.	Aura E. Price.	Luther E. Page.
102	McClary.	Epsom.	Samuel R. Yeaton.	John H. Dolbeer.	Miss Annie L. Fowler.
103	Monadnock.	Dublin.	Fred C. Gowing.	Mrs. Kate A. Townsend.	Miss Sarah F. Townsend.
104	Bartlett.	Salisbury.	Stephen B. Sweatt.	Thomas D. Little.	John W. Folsom.
105	Silver Lake.	Harrisville.	Bernard F. Bemis.	Mrs. Annie M. Phelps.	Mrs. Mary E. Parker.
106	Fruitdale.	Mason.	Edwin S. Spaulding.	George L. Blood.	Miss Nellie F. Thompson.
107	Pemigewasset.	Hill.	Joseph W. Favor.	Leon Blake.	F. R. Woodward.
108	Franklin.	Franklin.	Elmer D. Kelley.	Mrs. Jerry G. Clark.	Miss Alice M. Colby.
109	Rumford.	East Concord.	Fred S. Farnum.	Frank P. Curtis.	Miss Effie M. Curtis.
110	Friendship.	Northfield.	Arthur H. Hill.	Miss Mabel McDuff.	Lucien F. Batchelder.
111	Pembroke.	Pembroke.	Mrs. Sarah F. Dearborn.	Miss Fronie G. Russ.	Mrs. Jennie E. Cheney.
112	Sunapee Lake.	Newbury.	Richard T. Muzzey.	Mrs. Alice J. Muzzey.	Willis E. Muzzey.
113	Capital.	Concord.	Frank Lane.	Mrs. Mary E. Ballard.	Miss Lizzie Stokes.
114	Golden Rod.	Swansey.	Henry W. Banks.	Mrs. Lucretia A. Carlton.	C. H. Rockwood.
115	Granite Lake.	Nelson.	Henry D. Taylor.	James H. Scott.	C. B. McClure.
116	Mt. Washington.	Whitefield.	J. A. Goodwin.	Mrs. J. A. Goodwin.	Mrs. F. A. Shute.
117	Lawrence.	Belmont.	E. Gerry Ladd.	Mrs. J. P. Gillev.	Mrs. Hattie A. Lamprey.
118	Marlborough.	Marlborough.	Charles L. Clark.	Miss Adele T. Peck.	Almon C. Mason.
119	Barnstead.	Barnstead.	Josie L. Davis.	C. F. Davis.	Calista M. Downs.
120	Laconia.	Laconia.	S. J. P. Hadley.	Miss Annie E. Hadley.	Miss Lena M. Flanders.
121	Loudon Surprise.	Loudon.	Alfred P. Batchelder.	George W. Rowell.	Clara A. Mudgett.
122	Scammell.	Durham.	Lucien Thompson.	George D. Stephens.	Miss Mary A. Burnham.

123	New Hampton.	M. H. Merrow.	Mrs. Abbie Howard.	Mrs. I. A. Dyer.
124	Star King.	Irving Applebee.	Mrs. Mary F. Applebee.	James G. Summers.
125	Walpole.	Edwin Guild.	Mrs. Henry J. Watkins.	Alvin Dwinell.
126	Lebanon.	Osgood T. Purmort.	Charles S. Ford.	Mrs. Mary J. Berry.
127	Massabesic.	Sylvester E. Emery.	Mrs. Sarah H. Gilbert.	Alfred D. Emery.
128	Lake Shore.	Levi T. Haley.	Joseph Levando.	Jonas W. Piper.
129	Ashuelot.	Lansing W. Wilder.	Mrs. Mary A. Hammond.	Mrs. Lucy W. Osborne.
130	Ossipee Mountain.	George O. Beane.	Charles J. Burleigh.	Mrs. Julia F. R. Pray.
131	Cheshire.	Ellery E. Rugg.	Mrs. Sarah E. Spaulding.	Charles C. Houghton.
132	Chichester.	J. Frank Towle.	Mrs. Sue A. French.	Abraham M. Drake.
133	Wantastiquet.	George P. Slate.	L. Frank Liscom.	Mrs. L. Jeanette Davis.
134	Marshall P. Wilder.	Frank A. Tuttle.	Mrs. Melissa Ashley.	Miss Mabel G. Moody.
135	Jaffrey.	W. J. Mower.	Mrs. Ada M. Jaquith.	Mrs. S. H. Chamberlain.
136	Excelsior.	James M. Perkins.	Daniel W. Howe.	Mrs. Perley E. Fox.
137	Riverside.	J. M. Lang.	Mrs. Mary Britton.	W. L. Johnson.
138	Great Meadow.	Willard Bill, Jr.	Charles K. Cobb.	George J. Bennett.
139	Arlington.	Harvey Jewell.	Mrs. Lizzie A. Morse.	S. M. Morse.
140	Freedom.	Almon K. Bennett.	Charles H. Andrews.	George F. Huckins.
141	Amoskeag.	E. J. Burnham.	R. D. Gay.	Charles H. Butman.
142	Tuftonborough.	George W. Copp.	Miss Lucy M. K. Neal.	John A. Edgerley.
143	Atkinson.	Eugene E. Sawyer.	Gilman Greenough.	Charles W. Garland.
144	Sunapee Mountain.	Russell T. Maxfield.	Fred P. Jones.	Mrs. S. D. Maxham.
145	Pistareen.	W. A. Partridge.	Mrs. Flora M. Hamilton.	Frank C. Hamlin.
146	Pequawket.	Frank P. Allard.	Miss Jennie McMillan.	James W. Whitaker.
147	Richmond.	Asa H. Fullock.	Mrs. Cora F. Martin.	Mrs. Lucy J. Freeman.
148	Hooksett.	Arthur Kimball.	Mrs. Winnie E. Davis.	G. W. Short.
149	Granite State.	Irving M. Heath.	Miss Kate Dalton.	Miss Anna L. George.
150	Junior.	G. F. Farley.	Mrs. R. T. S. Shepard.	Miss Carrie A. Tirrell.
151	Meriden.	Josiah Davis.	Miss Hattie S. Davis.	Marion Eastman.
152	Blackwater.	Everand C. Perkins.	Almond H. Smith.	Nathan Woodbury.
153	Honor Bright.	Horace R. Fifield.	Mrs. Rose M. Tyler.	Mrs. Rua A. Fifield.
154	Fitzwilliam.	Timothy Blodgett.	Mrs. Fannie M. Bigelow.	D. F. White.
155	Merry Meeting.	Oscar E. Davis.	Mary E. Avery.	Mrs. P. H. Wheeler.

LIST OF SUBORDINATE GRANGES AND THEIR OFFICERS, 1892. — *Continued.*

No.	NAME.	LOCATION.	MASTER.	LECTURER.	SECRETARY.
156	Surry.	Surry.	William H. Porter.	Mary E. Field.	John A. Weber.
157	Trojan.	Troy.	Henry M. Whittemore.	Charles W. Brown.	George W. Mason.
158	Mt. Israel.	Sandwich.	B. F. Fellows.	Charles B. Hoyt.	E. W. Hodsdon.
159	Lincoln.	West Swanzey.	Park E. Wright.	James E. Handy.	Mrs. Sarah C. Kendall.
160	Carroll.	Ossipee.	John E. Hodgdon.	A. J. Hamm.	J. C. Ames.
161	Jeremiah Smith.	Lee.	B. Frank Davis.	Frank J. Davis.	H. F. Caverno.
162	Newfound Lake.	Bristol.	Calvin Martin.	Mrs. Helen A. Judkins.	Woodbury Sleeper.
163	Hampstead.	Hampstead.	John C. Sanborn.	William H. Davis.	Mrs. J. R. Davis.
164	Crescent Lake.	North Barnstead.	William H. Berry.	Mrs. Emma R. Locke.	Mrs. A. E. Chamberlain.
165	Chocorua.	Tamworth.	Albert S. Pollard.	Gilman Rice.	Francis P. Remick.
166	Patucoway.	Nottingham.	James H. Kelsey.	E. Frank Gerrish.	Mrs. Thomas B. Bartlett.
167	Candia.	Candia.	Benjamin F. Lang.	Mrs. Francis D. Rowe.	Frank E. Page.
168	Salem.	Salem.	Charles T. Maxwell.	Mrs. George Tyler.	David L. Randlett.
169	Chester.	Chester.	Addison A. Bean.	Mrs. Emily J. Hills.	George S. West.
170	Winnicut.	Stratham.	George A. Wiggin.	R. M. Scammon.	Mrs. George A. Wiggin.
171	Hampton Falls.	Hampton Falls.	Frank S. Greene.	Mrs. W. J. Prescott.	George F. Merrill.
172	Keeneborough.	Brentwood.	Arthur W. Dudley.	Miss Mary Caverly.	Charles Flanders.
173	Kensington.	Kensington.	Harrison Rowe.	Miss Sarah A. Greene.	John W. York.
174	Hillside.	Eaton.	Frank M. Hatch.	Fred R. Thompson.	Edith Palmer.
175	Ossipee Lake.	Centre Ossipee.	Daniel Abbott.	Mrs. Fannie Grant.	W. S. Chase.
176	Piscataqua.	Newington.	Frederick Pickering.	Eldora Pickering.	J. E. Pickering.
177	Kingston.	Kingston.	John W. Prescott.	Frank A. Woodman.	Mrs. Nellie J. Ingalls.
178	Lovell Union.	Wakefield.	Edwin A. Himes.	H. E. Rogers.	J. I. Sanborn.
179	South Newmarket.	South Newmarket.	Frank P. Neal.	Harrison G. Burley.	Herbert W. Smith.
180	Fremont.	Fremont.	Alden F. Sanborn.	Mrs. Jennie S. Mould.	Andrew J. Brown.
181	Sandown.	Sandown.	Edwin C. Mills.	Mrs. Nellie C. Sanborn.	Charles H. Brown.
182	Windham.	Windham.	Horace Perry.	Mrs. Addie Armstrong.	Mrs. Mary F. Anderson.
183	Rockingham.	Epping.	C. E. Folsom.	John J. Tilton.	John M. Harvey.

184	Penacook Park.	West Concord.	J. E. Shepard.	.	.	.	.	Miss Cora B. Little.
185	Centennial.	Barrington.	H. F. Carter.	.	.	.	.	Miss Edith Locke.
186	Plaistow.	Plaistow.	Moses B. Dow.	.	.	.	.	John H. Pollard.
187	Danville.	Danville.	C. H. Bradley.	.	.	.	.	Miss Lula F. Richardson.
188	Rumney.	Rumney.	C. A. Holden.	.	.	.	.	G. P. Cook.
189	Bow.	Bow.	D. N. Morgan.	.	.	.	.	Miss Eva M. Colby.

NEW HAMPSHIRE GRANGE FAIR.

SECRETARY'S REPORT.

OFFICERS FOR 1892.

WARREN TRIPP, <i>President</i>	.	.	.	Epsom.
JOHN G. TALLANT, <i>Vice-President</i>	.	.	.	East Concord.
G. H. WADLEIGH, <i>Treasurer</i>	.	.	.	Tilton.
N. J. BACHELDER, <i>Secretary</i>	.	.	.	Andover.

EXECUTIVE COMMITTEE.

JOHN C. MORRISON	.	.	.	.	Boscawen.
D. G. ROBERTS	.	.	.	.	Goffstown.
THOMAS J. COURSER	.	.	.	.	Warner.

DIRECTORS.

John D. Lyman, Exeter.	Veron Eaton, Mason.
Leone I. Chase, Canterbury.	Frank R. Woodward, Hill.
Sumner N. Ball, Washington.	Frederick Flanders, Franklin Falls.
C. C. Shaw, Milford.	George W. Silver, Penacook.
Kimball Pollard, Newport.	Clarence W. Whitcher, Tilton.
James E. Cassidy, Claremont.	C. A. Gile, Pembroke.
James U. Prince, Amherst.	Thomas J. Leach, Newbury.
David Clement, Hudson Centre.	Isaac W. Bushey, Concord.
Charles M. Stratton, Hollis.	H. D. Taylor, Munsonville.
C. W. Murch, Nashua.	Harvey Sargent, East Swanzey.
Andrew Holt, South Lyndeboro'.	A. W. Miner, Whitefield.
Henry Slade, Acworth.	Charles H. Foss, Tilton.
Stanley H. Abbott, Wilton.	John R. Farnum, Marlborough.
William H. Kendall, Mont Vernon.	John Waldo, Centre Barnstead.
Albert Weld, Cornish Flat.	Charles N. Folsom, Lakeport.

- E. E. Parker, Reed's Ferry.
 E. F. Dutton, Francestown.
 William O. Stearns, Hancock.
 George F. Barker, Wilton.
 William Moore, Peterborough.
 H. J. Moore, Bank Village.
 Albert A. Pressey, East Derry.
 Josiah W. Emery, Henniker.
 George Pattee, Goffstown.
 Alvin Tubbs, Deering.
 Sewell E. Hoyt, East Weare.
 Chas. G. Pillsbury, Londonderry.
 Quincy Barnard, Bedford.
 John T. Dickey, Alstead.
 Zeb Twitchell, Grange.
 F. H. Cross, Monroe.
 Noah Farr, Littleton.
 G. F. Smith, Meredith.
 Perry E. Hunt, Lakeport.
 William Woodbury, New Boston.
 George Simons, Weare Centre.
 John A. Noyes, Swiftwater.
 Robert T. Gould, Contoocook.
 A. P. Howe, Bradford.
 D. S. Bridgman, Hanover.
 J. Frank Elliott, Lyme.
 F. W. Flint, Hillsborough Bridge.
 James W. Foss, Merrill.
 David Noyes, West Canaan.
 O. B. Mills, Enfield Centre.
 John H. Morse, Enfield Centre.
 Kendrick S. Bullock, Danbury.
 A. M. Shackford, Canaan.
 J. L. Stevens, Deerfield.
 George B. Barnard, East Hebron.
 William A. Brown, Strafford.
 Charles W. Davis, Dover.
 G. A. Spafford, Brattleboro, Vt.
 Fred Roby, Wilmot Flat.
 George H. Haley, East Andover.
 T. J. Courser, Warner.
 George H. Whitcer, Durham.
 William Wallace, New Hampton.
 Lyman D. Kenison, Jefferson.
 George W. Stanley, Drewsville.
 M. M. Lane, Lebanon.
 Willard H. Griffin, Auburn.
 George F. Horn, Wolfeborough.
 Samuel S. White, East Sullivan.
 Sam'l J. Thompson, Water Village.
 Henry W. Nims, Keene.
 Albert Thompson, Chichester.
 C. C. Holton, Hinsdale.
 Joel Wellington, East Rindge.
 F. J. Lawrence, Jaffrey.
 Daniel W. Howe, Marlow.
 Bert A. Taylor, Dalton.
 A. H. Chickering, E. Westmorel'd.
 Sidney M. Morse, Winchester.
 Stephen W. Fowler, Freedom.
 Reed P. Silver, Manchester.
 Rob't Lamprey, Centre Tuftonboro'.
 William B. Reynolds, Atkinson.
 Jessial P. Gove, Goshen.
 C. L. Puffer, Chesterfield.
 Frank P. Allard, North Conway.
 Almon Twitchell, Richmond.
 G. W. Short, Hooksett.
 Irving M. Heath, Newton Junct'n.
 D. G. Roberts, Goffstown Centre.
 George W. Stone, Andover.
 John S. Currier, East Sullivan.
 Walter J. Putney, Fitzwilliam Dep't.
 R. Hurd, Alton.
 George K. Harvey, Surry.
 B. F. Fellows, Centre Sandwich.
 George O. Capron, West Swanzey.
 A. W. Leighton, Centreville.
 Warren F. Keyser, Bristol.
 A. M. Moulton, Hampstead.
 Frank J. Holmes, Centre Barnstead.
 Joseph W. Cilley, Nottingham.

William H. Chadwick, N. Sutton.	Francis D. Rowe, Candia Village.
Almon H. Cook, Plymouth.	William G. Crowell, Salem.
J. C. Morrison, Boscawen.	Addison A. Bean, Chester.
Baxter Gay, New London.	William Lester, Stratham.
B. H. Griffiths, Stoddard.	Warren Brown, Hampton Falls.
Sewel N. Lougee, Pittsfield.	John H. Carr, Brentwood.
William A. Holt, Antrim.	Leroy S. Sanborn, Exeter.
Thomas W. Taylor, Sanbornton.	W. S. Chase, Centre Ossipee.
Daniel G. Holmes, Mast Yard.	Levi S. Bartlett, Kingston.
Albert R. Page, Gilmanston I. W.	D. H. Sanborn, Wolfeboro' Junct.
James H. Tripp, Short Falls.	John S. Colby, Sandown.
Fred C. Gowing, Dublin.	Edwin O. Dinsmore, Canobie Lake.
Thomas R. Little, Salisbury.	C. F. Edgerly, Epping.
Benjamin Willard, Dublin.	Willis D. Hardy, Greenfield.
Gilbert P. Hoyt, Newington.	H. F. Carter, North Barrington.
George B. Little, West Concord.	E. D. Sanborn, Fremont.
Sidney Sanborn, Meriden.	C. U. Jenness, South Newmarket.
Howard M. Drew, Eaton.	Seth W. Cass, Danville.
John H. Congdon, Troy.	

The seventh annual exhibition of the New Hampshire Grange Fair Association was held on the Tilton and Franklin Driving Park, Tilton, N. H., September 13, 14, and 15, 1892. The second day of the fair was rainy and consequently a postponement was made continuing the fair through the 16th. The exhibition was one of the best ever made in New Hampshire and was attended by a large number of people. The first day was devoted to getting the exhibits into shape, with pulling matches and other amusements in the afternoon.

A farmers' meeting was held at the town hall in the evening which was well attended, and addresses were made by Hon. Z. A. Gilbert, of Maine; A. W. Cheever, of Massachusetts; C. C. Shaw, of Milford; J. L. Gerrish, of Webster; Charles McDaniel, of Springfield; E. C. Hutchinson, of Milford; C. H. Hayes, of Portsmouth; George E. Newman, of Gilsum, and other leading agriculturists of New Hampshire.

Governor's day, which was to be observed on the 14th, was postponed to the 15th, when addresses were made from

the speakers stand by His Excellency Governor Tuttle, Hon. Moses Humphrey, Hon. W. E. Chandler, Hon. H. W. Blair, Hon. Henry M. Baker, Hon. N. B. Bryant, and E. J. Burnham. This was supplemented in the afternoon with speaking by Hon. D. H. Goodell and others. The attendance on this day was about ten thousand.

The 16th was devoted more especially to sports and included one of the finest balloon ascensions by Prof. James Allen, of Providence, R. I., ever witnessed in the State. The exhibition of various classes of horses on the track interested the visitors at intervals during the day. Horse races were given each afternoon of the fair and created much interest. Notwithstanding the rain on the middle day of the fair the receipts were sufficient to meet all expenses and premiums and a small surplus to add to the fund already on hand.

The following list of premiums awarded will be of interest to all.

PREMIUMS.

JERSEYS.

HERD PREMIUM.

1st, J. G. Tallant, East Concord.

BULLS.

Two years. — 1st, Fred Goodell, Franklin Falls.

One year. — 1st, J. G. Tallant, East Concord.

BULL CALVES.

1st, M. W. Bennett, East Tilton; 2d, J. G. Tallant, East Concord.

COWS.

Four years. — 1st and 2d, J. G. Tallant, East Concord.

HEIFERS.

Three years. — 1st and 2d, J. G. Tallant, East Concord.

Two years. — 1st and 2d, J. G. Tallant, East Concord.

One year. — 1st and 2d, J. G. Tallant, East Concord.

HEIFER CALVES.

1st, J. G. Tallant, East Concord; 2d, Fred Goodell, Franklin Falls.

Awarding committee. — Z. O. Gilbert, North Greene, Maine.

HOLSTEINS.

HERD PREMIUM.

1st, Henry W. Keyes, North Haverhill; 2d, D. H. Goodell, Antrim.

BULLS.

Three years. — 1st, Henry W. Keyes, North Haverhill.

Two years. — 1st, P. C. Clough, Canterbury.

One year. — 1st, D. H. Goodell, Antrim; 2d, J. C. Morrison, Boscawen.

BULL CALVES.

1st, D. H. Goodell, Antrim; 2d, Henry W. Keyes, North Haverhill.

COWS.

Four years. — 1st, Henry W. Keyes, North Haverhill; 2d, D. H. Goodell, Antrim.

HEIFERS.

Three years. — 1st and 2d, D. H. Goodell, Antrim.

Two years. — 1st and 2d, Henry W. Keyes, North Haverhill.

One year. — 1st and 2d, Henry W. Keyes, North Haverhill.

HEIFER CALVES.

1st, Henry W. Keyes, North Haverhill; 2d, D. H. Goodell, Antrim.

Awarding committee. — Z. O. Gilbert, North Greene, Maine.

AYRSHIRES.

HERD PREMIUMS.

1st, C. H. Hayes & Sons, Portsmouth; 2d, Andy Holt, South Lyndeborough.

BULLS.

Three years. — 1st, C. H. Hayes & Sons, Portsmouth; 2d, Andy Holt, South Lyndeborough.

One year. — 1st, Ansel F. Gove, Lakeport; 2d, C. H. Hayes & Sons, Portsmouth.

BULL CALVES.

1st, Ansel F. Gove, Lakeport; 2d, Andy Holt, South Lyndeborough.

COWS.

Four years. — 1st and 2d, C. H. Hayes & Sons, Portsmouth.

HEIFERS.

Three years. — 1st, Andy Holt, South Lyndeborough; 2d, C. H. Hayes & Sons, Portsmouth.

Two years. — 1st, C. H. Hayes & Sons, Portsmouth; 2d, Andy Holt, South Lyndeborough.

One year. — 1st, C. H. Hayes & Sons, Portsmouth; 2d, Ansel F. Gove, South Lyndeborough.

HEIFER CALVES.

1st, C. H. Hayes & Sons, Portsmouth; 2d, Andy Holt, South Lyndeborough.

Awarding committee. — Z. O. Gilbert, North Greene, Maine.

SHORTHORNS.

BULL CALVES.

1st and 2d, C. W. Knowles, Belmont.

Awarding committee. — A. W. Cheever, Dedham, Mass.

DEVONS.

HERD PREMIUMS.

1st, John B. Sanborn, East Concord; 2d, Ward Parker & Son, Reed's Ferry.

BULLS.

Three years. — 1st, William Neal & Son, Meredith; 2d, John B. Sanborn, East Concord.

Two years. — 1st, John B. Sanborn, East Concord; 2d, Ward Parker & Son, Reed's Ferry.

One year. — 1st, Ward Parker & Son, Reed's Ferry; 2d, William Neal & Son, Meredith.

BULL CALVES.

1st, C. W. Whicher, Tilton; 2d, William Neal & Son, Meredith.

COWS.

Four years. — 1st, A. G. Moore, Tilton; 2d, Ward Parker & Son, Reed's Ferry.

HEIFERS.

Three years. — 1st, John B. Sanborn, East Concord; 2d, A. G. Moore, Tilton.

Two years. — 1st, A. G. Moore, Tilton; 2d, C. H. Whicher, Tilton.

HEIFER CALVES.

1st, A. G. Moore, Tilton; 2d, John B. Sanborn, East Concord.

Awarding committee. — A. W. Cheever, Dedham, Mass.

HEREFORDS.

HERD PREMIUMS.

1st, H. N. Clay, Laconia; 2d, Thomas W. Taylor, Sanbornton.

BULLS.

Three years. — 1st, H. N. Clay, Laconia.

One year. — Thomas W. Taylor, Sanbornton.

BULL CALVES.

1st, Thomas O. Taylor, Sanbornton; 2d, H. N. Clay, Laconia.

COWS.

Four years. — 1st, H. N. Clay, Laconia; 2d, Thomas W. Taylor, Sanbornton.

HEIFERS.

Three years. — 1st, H. N. Clay, Laconia.

Two years. — 1st, H. N. Clay, Laconia; 2d, Thomas W. Taylor, Sanbornton.

One year. — 1st, H. N. Clay, Laconia.

HEIFER CALVES.

1st, Thomas W. Taylor, Sanbornton.

Awarding committee. — A. W. Cheever, Dedham, Mass.

GUERNSEYS.

BULLS.

Three years. — 1st, A. H. Colby, Tilton.

Two years. — 1st, Eben C. Goodell, North Sanbornton.

BULL CALVES.

1st, A. H. Colby, Tilton.

COWS.

Four years. — 1st and 2d, A. H. Colby, Tilton.

HEIFERS.

Two years. — 1st, A. H. Colby, Tilton.

One year. — 1st, A. H. Colby, Tilton.

Awarding committee. — Z. O. Gilbert, North Greene, Maine.

GRADES.

COWS.

Four years. — 1st, Dudley Leavitt, Meredith; 2d, C. H. Hayes & Sons, Portsmouth.

HEIFERS.

Three years. — 1st, P. C. Clough, Canterbury; 2d, C. H. Hayes & Sons, Portsmouth.

Two years. — 1st, C. H. Ayers, Northfield Depot; 2d, P. C. Clough, Canterbury.

One year. — 1st, A. G. Moore, Tilton; 2d, William Neal & Son, Meredith.

HEIFER CALVES.

1st, A. H. Colby, Tilton; 2d, C. H. Hayes & Sons, Portsmouth.

YEARLINGS.

Not less than four heifers. — 1st, Dudley Leavitt, Meredith; 2d, C. H. Ayers, Northfield Depot.

Awarding committee. — William P. Ballard, Josiah W. Emery, F. H. Flanders.

SWEEPSTAKES.

COWS FOR BUTTER.

1st and 2d, J. G. Tallant, East Concord.

FOUR COWS OR HEIFERS FOR MILK.

1st, D. H. Goodell, Antrim; 2d, H. W. Keyes, North Haverhill.

FOUR COWS OR HEIFERS FOR BUTTER.

1st, D. H. Goodell, Antrim; 2d, A. H. Colby, Tilton.

Awarding committee. — E. B. Merrill, Franklin.

COWS WITH SHOW OF STOCK.

1st, Dudley Leavitt, Meredith; 2d, D. H. Goodell, Antrim.

Awarding committee. — Henry D. Taylor, E. E. Parker, D. W. Rugg.

GRANGE TEAMS.

TEAM OF SIX YOKE OXEN.

Four years. — 1st, Winnipesaukee Grange, Meredith; 2d, Friendship Grange, Northfield.

TEAM OF SIX YOKE STEERS.

Under four years. — 1st, Winnipesaukee Grange, Meredith; 2d, Harmony Grange, Sanbornton.

Under two years. — 1st, Harmony Grange, Sanbornton; 2d, Winnipesaukee Grange, Meredith.

Awarding committee. — J. M. Fuller, C. W. Stone, Levi T. Haley.

INDIVIDUAL TEAMS.

THREE YOKE OXEN.

Three years or over. — 1st, J. M. Neal & Son, Meredith; 2d, J. F. Smith, Tilton.

Awarding committee. — J. M. Fuller, C. W. Stone, Levi T. Haley.

WORKING OXEN.

Five years or over. — 1st, S. F. & W. H. Wadleigh, Meredith; 2d, C. G. Burleigh, Meredith.

Four years. — 1st, S. F. & W. H. Wadleigh, Meredith; 2d, J. M. Neal & Son, Meredith.

Three years. — 1st, J. M. Neal & Son, Meredith; 2d, J. W. Wiggin, Meredith.

Two years. — 1st, Dudley Leavitt, Meredith; 2d, E. F. Wiggin, Meredith.

One year. — 1st, William Neal & Son, Meredith; 2d, J. W. Wiggin, Meredith.

CALVES.

1st. — C. H. Ayers, Northfield Depot; 2d, George B. Lane, Sanbornton.

TRAINED STEERS.

One year. — 1st, J. B. Calef, Sanbornton.

TRAINED STEERS — CALVES.

1st, J. B. Calef, Sanbornton.

Awarding committee. — D. W. Rugg, H. D. Taylor, E. E. Parker.

PULLING OXEN AND STEERS.

PULLING STAGS AND BULLS.

Over six feet ten inches. — 1st, J. E. Smith, Tilton; 2d, J. F. Leighton, Franklin Falls; 3d, J. M. Neal & Son, Meredith.

PULLING STEERS.

Two years. — 1st, C. O. Copp, Gilford; 2d, Dudley Leavitt, Meredith.

Three years. — 1st, J. W. Wiggin, Meredith; 2d, Albert B. Shaw, Franklin Falls; 3d, J. B. Calef, Sanbornton.

PULLING STAGS.

1st, A. G. Moore, Tilton.

Awarding committee. — D. W. Rugg, J. E. Shepard, Levi S. Bartlett.

HORSES, STANDARD.

STALLIONS, SWEEPSTAKES.

Of an age with show of stock. — 1st, Nathaniel E. Martin, Concord, "Newflower"; 2d, Nathaniel E. Martin, Concord, "Penacook."

Awarding committee. — T. O. King, C. H. Bowles.

STALLIONS.

Five years with show of stock. — 1st, F. L. Gerald, Laconia, "Glencoe Wilkes"; 2d, H. N. Clay, Laconia, "Ivy Wilkes."

Four years. — 1st, F. L. Gerald, Laconia, "Ring Master"; 2d, Nathaniel E. Martin, Concord, "Penacook."

Three years. — 1st, James N. Nichols, Tilton, "Diamond Wilkes"; 2d, C. J. White & Son, East Andover, "Matchwood."

Two years. — 1st, H. P. Shaw, Salisbury, "H. P. Shaw"; 2d, E. A. Chase, Laconia, "Stornaway, Jr."

One year. — 1st, F. L. Gerald, Laconia, "Lord Douglass"; 2d, H. N. Clay, Laconia, "Vaneer."

Awarding committee. — T. H. King, C. H. Bowles.

BROOD MARES.

1st, F. R. Sargent, Tilton, "Bessie"; 2d, C. J. Chamberlain, Northfield, "Kitty Cram."

Awarding committee. — T. O. King, C. H. Bowles.

GELDINGS, MARES, AND FILLIES.

Four years. — 1st, Sam Hodgson, Meredith, "Lady Gordon"; 2d, Sam Hodgson, Meredith, "Missie."

Three years. — 1st, Sam Hodgson, Meredith, "Lady Falcon"; 2d, C. J. Chamberlain, Northfield.

Two years. — 1st, Charles V. Fisher, East Pembroke, "Myrtie Almont"; 2d, John D. Clark, Strafford, "Belle Patchen."

One year. — 1st, C. J. Chamberlain, Northfield, filly; 2d, John D. Clark, Strafford, filly.

Under one year. — 1st, F. R. Sargent, Tilton, filly; 2d, N. E. Martin, Concord, colt.

Awarding committee. — T. O. King, C. H. Bowles.

HORSES, NON-STANDARD.

STALLIONS WITH SHOW OF STOCK.

1st, Frank J. Thomas, North Sanbornton.

Four years. — 1st, C. G. Blanchard, Concord; 2d, George P. Titcomb, Salisbury.

Three years. — 1st, C. G. Blanchard, Concord; 2d, C. J. Chamberlain, Northfield Depot.

Two years. — 1st, George W. Copp, Melvin Village; 2d, George P. Titcomb, Salisbury,

One year old. — 1st, Levi Clark, M. D., Pittsfield; 2d, C. V. Fisher, East Pembroke.

Under one year. — 1st, C. V. Fisher, East Pembroke; 2d, George W. Fisher, Boscawen.

Awarding committee. — T. O. King, C. H. Bowles.

BROOD MARES.

1st, F. R. Sargent, Tilton; 2d, George P. Titcomb, Salisbury.

Awarding committee. — T. O. King.

GELDINGS, MARES, AND FILLIES.

Three years. — 1st, J. G. Whitcomb, Potter Place, "Dick Felton"; 2d, W. D. Tuttle, East Andover, "Queen Bess."

Two years. — 1st, J. P. Kimball, Canterbury, filly; 2d, E. H. Morrison, Dover.

One year. — 1st, George W. Fisher, Boscawen, filly.

Under one year. — 1st, F. R. Sargent, Tilton, "Nelly Gray"; 2d, F. R. Sargent, Tilton, "Miss Phelps."

Awarding committee. — T. O. King.

DRAFT STALLIONS.

Five years. — 1st, James M. Jackson, Amherst, "Young Reno."

Four years. — 1st, George A. Leavitt, Laconia, "Prince."

Three years. — 1st, A. A. Pressey, East Derry; 2d, Charles V. Fisher, Boscawen.

Two years. — 1st, A. A. Pressey, East Derry.

Awarding committee. — George F. Newman, Albert Thompson.

GENTLEMEN'S SINGLE DRIVING HORSES.

1st, George H. Brown, Tilton; 2d, Levi Clark, M. D., Pittsfield.

Awarding committee. — T. O. King, George E. Newman, Albert Thompson.

MATCHED DRIVING HORSES.

1st, J. L. Lovering, Tilton; 2d, M. K. Smith, Belmont.

Awarding committee. — George E. Newman, Albert Thompson.

WALKING HORSES.

1st, Charles V. Fisher, East Pembroke; 2d, Herbert L. Brown, Canterbury.

Awarding committee. — George E. Newman, Albert Thompson.

SHEEP.

LONG WOOLED SHEEP — COTSWOLDS, LEICESTERS, ETC.
(THOROUGHbred).

RAMS.

Two years with show of stock. — 1st, Jewell Gove, Gilford.

One year. — 1st, Jewell Gove, Gilford.

RAM LAMBS.

1st, Jewell Gove, Gilford.

EWES.

Two years. — 1st, C. O. Copp, Gilford; 2d, Jewell Gove, Gilford.

EWE LAMBS.

1st, Jewell Gove, Gilford.

LONG WOOLED SHEEP (GRADES).

RAMS.

Two years. — 1st, Jewell Gove, Gilford.

RAM LAMBS.

1st, C. O. Copp, Gilford.

EWES.

Two years. — 1st, William S. Weeks, Gilford Village; 2d, Jewell Gove, Gilford.

One year. — 1st, Jewell Gove, Gilford.

EWE LAMBS.

1st, Jewell Gove, Gilford; 2d, C. O. Copp, Gilford.

Awarding committee. — J. L. Gerrish, C. J. White, H. W. Nims.

SOUTH DOWNS (THOROUGHbred).

RAMS.

Two years. — 1st, William Neal & Son, Meredith.

RAM LAMBS.

1st, Jewell Gove, Gilford; 2d, William Neal & Son, Meredith.

EWES.

Two years. — 1st, William Neal & Son, Meredith.

One year. — 1st, William Neal & Son, Meredith.

EWE LAMBS.

1st, William Neal & Son, Meredith.

SOUTH DOWNS (GRADES).

RAM LAMBS.

1st, C. O. Copp, Gilford.

EWE LAMBS.

1st, Jewell Gove, Gilford.

Awarding committee. — J. L. Gerrish, C. J. White, H. W. Nims.

SHROPSHIRE DOWNS, AND ALL OTHER DOWNS (THOROUGHbred).

RAMS.

Two years. — 1st, Charles E. Currier, Andover; 2d, Jewell Gove, Gilford.

One year. — 1st, H. W. Keyes, North Haverhill.

EWES.

Two years. — 1st, H. W. Keyes, North Haverhill; 2d, Ward Parker & Sons, Reed's Ferry.

One year. — 1st and 2d, H. W. Keyes, North Haverhill.

EWE LAMBS.

1st, H. W. Keyes, North Haverhill; 2d, Ward Parker & Sons, Reed's Ferry.

SHROPSHIRE DOWNS (GRADES).

RAMS.

1st, A. H. Colby, Tilton.

EWE LAMBS.

1st and 2d, C. H. Ayers, Northfield Depot.

Awarding committee. — J. L. Gerrish, C. J. White, H. W. Nims.

GRADE MERINOS.

RAMS.

Two years or over. — 1st, A. H. Colby, Tilton; 2d, William S. Weeks, Gilford.

RAM LAMBS.

1st, A. H. Colby, Tilton; 2d, George H. Wadleigh, Tilton.

EWES.

Two years. — 1st, George H. Wadleigh, Tilton; 2d, William S. Weeks, Gilford.

One year. — 1st, George H. Wadleigh, Tilton; 2d, William S. Weeks, Gilford.

EWE LAMBS.

1st, William S. Weeks, Gilford; 2d, A. H. Colby, Tilton.

Awarding committee. — J. L. Gerrish, C. J. White, H. W. Nims.

SWINE.

BERKSHIRE (THOROUGHRED).

Boar, over six months. — 1st, E. F. Wiggin, Meredith.

Brood sow. — 1st, H. O. Mathews, Concord.

Boar pig. — 1st and 2d, H. O. Mathews, Concord.

Sow pig. — 1st, H. O. Mathews, Concord; 2d, G. Frank Smith, Meredith.

Litter pigs. — 1st, G. Frank Smith, Meredith.

BERKSHIRE (GRADES).

Sow pig. — 1st, John B. Yeaton, Northfield Depot.

Awarding committee. — T. E. Hunt, John L. Kelley.

SWINE.

POLAND CHINA (THOROUGHRED).

Boar. — 1st, H. O. Mathews, Concord.

Boar pig. — 1st, H. O. Mathews, Concord.

Sow pig. — 1st, H. O. Mathews, Concord.

POLAND CHINA (GRADES).

Boar. — 1st, H. O. Mathews, Concord.

Sow pig. — 1st, H. O. Mathews, Concord.

Awarding committee. — T. E. Hunt, John L. Kelley.

CHESTER WHITE.

Boar. — 1st, H. O. Mathews, Concord; 2d, C. H. Ayers, Northfield Depot.

Boar pig. — 1st, H. O. Mathews, Concord.

Sow pig. — 1st, H. O. Mathews, Concord.

Litter pigs. — 1st, C. H. Ayers, Northfield Depot.

Sow pig. — 1st, John B. Yeaton, Northfield Depot.

Awarding committee. — T. E. Hunt, John L. Kelley.

JERSEY RED.

Boar. — 1st, C. W. Whicher, Tilton.

Brood sow. — 1st, C. W. Whicher, Tilton.

Litter pigs — 1st, C. W. Whicher, Tilton.

Awarding committee. — T. E. Hunt, John L. Kelley.

YORKSHIRE.

Boar. — 1st, H. O. Mathews, Concord.

Boar pig. — 1st, H. O. Mathews, Concord.

Sow pig. — 1st, H. O. Mathews, Concord.

Awarding committee. — T. E. Hunt, John L. Kelley.

SMALL YORKSHIRE.

Boar. — 1st, H. O. Mathews, Concord.

Brood sow. — 1st, H. O. Mathews, Concord.

Awarding committee. — T. E. Hunt, John L. Kelley.

CHESHIRE.

Brood sow. — 1st, John L. Kelley, Franklin Falls.

Litter pigs. — 1st, John L. Kelley, Franklin Falls.

Awarding committee. — T. E. Hunt, John L. Kelley.

POULTRY.

BLACK COCHINS.

2d, H. O. Mathews, Concord.

PARTRIDGE COCHINS.

1st, H. O. Mathews, Concord.

Chicks. — 2d, H. O. Mathews, Concord.

BUFF COCHINS.

1st, Frank T. Moore, Goffstown; 2d, H. O. Mathews, Concord.

Chicks. — 1st and 2d, Frank T. Moore, Goffstown.

PLYMOUTH ROCKS.

2d, V. M. Sanborn, Franklin Falls.

Chicks. — 1st, E. F. Wiggin, Meredith; 2d, Leslie Gordon, Franklin Falls.

WHITE LEGHORNS.

1st, H. O. Mathews, Concord.

Chicks. — 2d, Mrs. O. G. Howe, Tilton.

BROWN LEGHORNS.

1st, F. R. Sargent, Tilton.

Chicks. — 1st, William W. Buchanan, Franklin Falls; 2d, Mrs. O. G. Howe, Tilton.

WYANDOTTES.

1st, H. O. Mathews, Concord; 2d, Charles H. Foss, Tilton.

Chicks. — 1st, Charles H. Foss, Tilton.

GAMES. — INDIAN.

1st, Frank T. Moore, Goffstown.

Chicks. — 2d, Frank T. Moore, Goffstown.

BLACK BREASTED RED GAME.

2d, William Neal & Son, Meredith.

Chicks. — 2d, William Neal & Son, Meredith.

SILVER SPANGLED HAMBURGS.

2d, Harlie H. Sanborn, East Concord.

Chicks. — 1st, Harlie H. Sanborn, East Concord; 2d, Mrs. Hannah A. Sanborn, Concord.

HOUDANS.

1st, F. C. Bailey, Sanbornton.

WHITE WYANDOTTES.

1st, H. O. Mathews, Concord.

WHITE PLYMOUTH ROCK.

Chicks. — 1st and 2d, Frank T. Moore, Goffstown.

RED PILE.

2d, William Neal & Son, Meredith.

Chicks. — 2d, William Neal & Son, Meredith.

Awarding committee. — E. G. Runnells.

FRUIT.

APPLES.

SUMMER APPLES.

General exhibit. — 1st, George Simons, Weare; 2d, C. C. Shaw, Milford.

EARLY HARVEST.

1st, V. M. Sanborn, Franklin Falls; 2d, George Simons, Weare.

EARLY STRAWBERRY.

2d, D. G. Roberts, Goffstown.

GOLDEN SWEET.

1st, F. P. Wentworth, Rochester; 2d, D. G. Roberts, Goffstown.

RED ASTRACHAN.

1st, George Simons, Weare; 2d, C. C. Shaw, Milford.

RED JUNE.

2d, D. G. Roberts, Goffstown.

SWEET BOUGH.

1st, V. M. Sanborn, Franklin Falls; 2d, George Simons, Weare.

TETOFSKY.

1st, John W. Farr, Littleton; 2d, George Simons, Weare.

WILLIAM'S FAVORITE.

1st, William Neal & Son, Meredith; 2d, George F. Smith, Meredith.

AUTUMN APPLES.

General exhibit. — 1st, C. C. Shaw, Milford; 2d, George Simons, Weare.

ALEXANDER.

1st, E. P. Jewett, Lakeport; 2d, John W. Farr, Littleton.

AUTUMN STRAWBERRY.

1st, G. Frank Smith, Meredith.

FAMEUSE.

1st, George Simons, Weare; 2d, J. W. Folsom, Salisbury.

GRAVENSTEIN.

1st, C. C. Shaw, Milford; 2d, D. G. Roberts, Goffstown.

JERSEY SWEET.

1st, D. G. Roberts, Goffstown.

MAIDEN'S BLUSH.

1st, Ellen P. Shaw, Franklin Falls; 2d, C. C. Shaw, Milford.

OLDENBURG.

1st, Joseph F. Smith, Meredith; 2d, C. W. Bedell, Littleton.

PORTER.

1st, G. Frank Smith, Meredith; 2d, T. C. Sweatt, Webster.

PEACH.

1st, C. W. Bedell, Littleton.

PUMPKIN SWEET.

1st, George Simons, Weare; 2d, F. O. Colby, Amoskeag.

ST. LAWRENCE.

1st, D. G. Roberts, Goffstown; 2d, W. H. Poore, Goffstown.

TWENTY OUNCE.

1st, D. G. Roberts, Goffstown; 2d, E. E. Sanborn, Lakeport.

WINTER APPLES.

General exhibit. — 1st, George Simons, Weare; 2d, C. C. Shaw, Milford.

BOTTLE GREENING.

2d, G. Elmer Sanborn, Lakeport.

BALDWIN.

1st, D. G. Roberts, Goffstown; 2d, George Simons, Weare.

BEN DAVIS.

1st, George Simons, Weare; 2d, D. G. Roberts, Goffstown.

ENGLISH RUSSET.

1st, C. C. Shaw, Milford.

GOLDEN RUSSET.

1st, D. G. Roberts, Goffstown; 2d, V. M. Sanborn, Franklin Falls.

GREEN SWEET.

1st, W. H. Poore, Goffstown; 2d, D. G. Roberts, Goffstown.

GILLIFLOWER.

1st, J. F. Smith, Meredith; 2d, George Simons, Weare.

HUBBARDSTON.

1st, C. C. Shaw, Milford; 2d, George Simons, Weare.

HURLBURT.

1st, J. F. Smith, Meredith; 2d, C. C. Shaw, Milford.

KENTISH FILL BASKET.

1st, C. C. Shaw, Milford.

KING.

1st, V. M. Sanborn, Franklin Falls; 2d, J. F. Smith, Meredith.

LADY SWEET.

1st, George Simons, Weare.

MUNSON SWEET.

1st, D. G. Roberts, Goffstown.

MANN.

1st, G. Elmer Sanborn, Lakeport; 2d, J. F. Smith, Meredith.

MCINTOSH RED.

1st, D. G. Roberts, Goffstown; 2d, L. N. George, Goffstown.

NORTHERN SPY.

1st, Albert A. Bertwell, Ossipee; 2d, George Simons, Weare.

NODHEAD.

1st, J. F. Smith, Meredith; 2d, Byron Shaw, Northfield.

PEARMAIN.

1st, George Simons, Weare; 2d, L. A. Moore, Tilton.

R. I. GREENING.

1st, George Simons, Weare; 2d, V. M. Sanborn, Franklin Falls.

ROXBURY RUSSET.

1st, D. G. Roberts, Goffstown; 2d, C. C. Shaw, Milford.

SPITZENBERG.

1st, George Simons, Weare; 2d, G. Elmer Sanborn, Lakeport.

SEEK NO FURTHER.

1st, George Simons, Weare.

TOLMAN SWEET.

1st, J. F. Smith, Meredith; 2d, A. H. Colby, Tilton.

WEALTHY.

1st, George Simons, Weare; 2d, John W. Farr, Littleton.

WAGNER.

1st, Albert A. Bertwell, Ossipee; 2d, E. P. Jewett, Lakeport.

YELLOW BELLFLOWER.

1st, C. C. Shaw, Milford; 2d, V. M. Sanborn, Franklin Falls.

GRAPES.

General exhibit. — 1st, George Simons, Weare; 2d, D. G. Roberts, Goffstown.

BRIGHTON.

1st, D. G. Roberts, Goffstown.

CONCORD.

2d, D. G. Roberts, Goffstown.

DRACUT AMBER.

1st, D. G. Roberts, Goffstown.

FUMELAN.

1st, D. G. Roberts, Goffstown.

HARTFORD PROLIFIC.

1st, Emma Merrill, Goffstown; 2d, D. G. Roberts, Goffstown.

MOORE'S EARLY.

1st, J. W. Folsom, Salisbury.

PEACHES.

CRAWFORD'S EARLY.

1st, W. E. Gay, Hillsborough; 2d, D. G. Roberts, Goffstown.

CRAWFORD'S LATE.

1st, R. Batchelder, Northfield; 2d, L. N. George, Goffstown.

EXCELSIOR.

1st, D. G. Roberts, Goffstown.

FOSTER.

1st, D. G. Roberts, Goffstown; 2d, L. N. George, Goffstown.

LOVETT'S WHITE.

1st, D. G. Roberts, Goffstown.

STUMP.

1st, W. E. Gay, Hillsborough; 2d, D. G. Roberts, Goffstown.

PLUMS.

General exhibit. — 1st, G. Frank Smith, Meredith; 2d, Thomas R. Payson, Tilton.

BRADSHAW.

1st, G. Frank Smith, Meredith.

DUANE'S PURPLE.

1st, T. S. Pulsifer, Campton.

GREEN GAGE.

1st, G. Frank Smith, Meredith; 2d, T. C. Sweatt, Webster.

GERMAN PRINCE.

1st, G. Frank Smith, Meredith.

IMPERIAL GAGE.

1st, John W. Farr, Littleton; 2d, Willis M. Batchelder, Northfield.

JEFFERSON.

1st, G. Frank Smith, Meredith.

LOMBARD.

1st, Willis M. Batchelder, Northfield; 2d, A. H. Colby, Tilton.

MOORE'S ARCTIC.

1st, G. Frank Smith, Meredith; 2d, George Simons, Weare.

NIAGARA.

1st, Willis M. Batchelder, Northfield; 2d, R. Batchelder, Northfield.

WASHINGTON.

1st, F. P. Wentworth, Rochester.

PEARS.

General exhibit. — 1st, C. C. Shaw, Milford; 2d, F. P. Wentworth, Rochester.

BARTLETT.

1st, F. P. Wentworth, Rochester; 2d, C. C. Shaw, Milford.

BELLE LUCRATIVE.

1st, Charles G. Pillsbury, Londonderry; 2d, F. P. Wentworth, Rochester.

BEURRE ROSE.

1st, Charles G. Pillsbury, Londonderry.

BEURRE CLAIRGEAU.

1st, Albert A. Bertwell, Ossipee.

BEURRE D'ANJOU.

1st, C. C. Shaw, Milford; 2d, Charles G. Pillsbury, Londonderry.

CLAPP'S FAVORITE.

1st, George Simons, Weare; 2d, Albert A. Bertwell, Ossipee.

DUCHESS.

1st, Charles G. Pillsbury, Londonderry; 2d, C. C. Shaw, Milford.

DANA'S HOVEY.

1st, F. P. Wentworth, Rochester.

DIX.

1st, C. C. Shaw, Milford.

FLEMISH BEAUTY.

1st, C. C. Shaw, Milford; 2d, Albert A. Bertwell, Ossipee.

LAWRENCE.

1st, Charles G. Pillsbury, Londonderry; 2d, F. P. Wentworth, Rochester.

LOUISE BONNE DE JERSEY.

1st, Charles G. Pillsbury, Londonderry; 2d, C. C. Shaw, Milford.

MOUNT VERNON.

1st, F. P. Wentworth, Rochester; 2d, C. C. Shaw, Milford.

MARIE LOUISE.

1st, F. P. Wentworth, Rochester.

ONONDAGA.

1st, C. C. Shaw, Milford; 2d, F. P. Wentworth, Rochester.

PARADISE D'AUTOMNE.

1st, C. C. Shaw, Milford.

SECKEL.

1st, Charles G. Pillsbury, Londonderry; 2d, Albert A. Bertwell, Ossipee.

SHELDON.

1st, Charles G. Pillsbury, Londonderry; 2d, George Simons, Weare.

TYSON.

1st, Charles G. Pillsbury, Londonderry; 2d, F. P. Wentworth, Rochester.

URBANISTE.

1st, F. P. Wentworth, Rochester; 2d, C. C. Shaw, Milford.

DISH OF ASSORTED PEARS.

1st, C. C. Shaw, Milford; 2d, Albert A. Bertwell, Ossipee.

Awarding committee. — Z. O. Gilbert, North Greene, Maine.

GRAINS AND SEEDS.

TWELVE-ROWED CORN.

1st, Byron Shaw, Franklin Falls; 2d, G. Frank Smith, Meredith; 3d, J. B. Calef, Sanbornton.

EIGHT-ROWED CORN.

1st, W. D. Tuttle, East Andover; 2d, V. M. Sanborn, Franklin Falls; 3d, T. C. Sweatt, Webster.

POP-CORN.

1st, Byron Shaw, Franklin Falls; 2d, R. Batchelder, Northfield.

SPRING WHEAT.

1st, T. S. Pulsifer, Plymouth; 2d, E. P. Jewett, Lakeport.

OATS.

1st, J. W. Folsom, Salisbury; 2d, Stanley H. Abbott, Wilton.

BARLEY.

1st, Morrill Moore, Tilton; 2d, R. Batchelder, Northfield.

BUCKWHEAT.

1st, T. C. Sweatt, Webster; 2d, C. W. Bedell, Littleton.

INDIA WHEAT.

1st, Willis M. Batchelder, Northfield; 2d, T. C. Sweatt, Webster.

SPRING RYE.

1st, Stanley H. Abbott, Wilton.

WINTER RYE.

1st, Morrill Moore, Tilton; 2d, Willis M. Batchelder, Northfield.

TIMOTHY GRASS SEED.

1st, R. Batchelder, Northfield.

LARGE FIELD BEANS.

1st, George W. Elkins, East Tilton; 2d, Albert B. Shaw, Franklin Falls.

SMALL FIELD BEANS.

1st, Ellen P. Shaw, Franklin Falls; 2d, Morrill Moore, Tilton.

FIELD PEAS.

1st, C. W. Bedell, Littleton.

Awarding committee. — W. W. Burbank, H. B. Sanborn, W. E. Gay.

VEGETABLES.

General exhibit. — 1st, L. M. Streeter, Manchester.

BEETS.

Blood turnip. — 1st, G. Frank Smith, Meredith.

Eclipse. — 2d, L. M. Streeter, Manchester.

Mangel Wurtzel. — 1st, Byron Shaw, Franklin Falls; 2d, L. M. Streeter, Manchester.

CABBAGE.

Sure Head. — 1st, George W. Elkins, Belmont.

Red. — 1st, J. F. Bailey, Sanbornton.

CARROTS.

Short Horn. — 1st, Henry S. Wheeler, Windham.

Half Long Orange. — 1st, George W. Elkins, East Tilton.

Long Orange. — 1st, Morrill Moore, Tilton.

Danvers. — 1st, L. M. Streeter, Manchester; 2d, L. M. French, Tilton.

Wilshire. — 1st, L. M. Streeter, Manchester.

SWEET CORN.

Amber Cream. — 2d, T. C. Sweatt, Webster.

Cory. — 1st, Morrill Moore, Tilton.

Stowell's Evergreen. — 1st, Reed P. Silver, Manchester; 2d, Albert B. Shaw, Franklin Falls.

Shaker. — 1st, G. Frank Smith, Meredith.

Farquar. — 1st, G. Frank Smith, Meredith.

Early Yellow. — 1st, T. C. Sweatt, Webster.

CRANBERRIES.

1st, Morrill Moore, Tilton; 2d, John Kilburn, Webster.

CUCUMBERS.

Exhibit of pickling cucumbers. — 1st, G. Frank Smith, Meredith; 2d, Mrs. L. A. Moore, Tilton.

WATERMELONS.

1st, J. F. Bailey, Sanbornton.

ONIONS.

Twelve onions. — 1st, David W. Watson, Durham; 2d, L. M. Streeter, Manchester.

Yellow Danvers. — 1st, David W. Watson, Durham; 2d, L. M. Streeter, Manchester.

PARSNIPS.

Large Dutch. — 1st, L. M. Streeter, Manchester.

POTATOES.

Early Rose. — 1st, Stanley H. Abbott, Wilton; 2d, C. W. Whicher, Tilton.

Beauty of Hebron. — 1st, Stanley H. Abbott, Wilton.

Snowflake. — 1st, J. B. Calef, Sanbornton; 2d, Abbie G. Durgin, Tilton.

White Elephant. — 1st, Abbie G. Durgin, Tilton.

Extra Early Vermont. — 1st, George W. Elkins, East Tilton; 2d, M. C. Foster, Canterbury.

Burpee's Early. — 1st, M. C. Foster, Canterbury.

Clark's No. 1. — 2d, H. B. Holman, Tilton.

Burbank Seedling. — 1st, Stanley H. Abbott, Wilton; 2d, J. M. Neal & Son, Meredith.

Early Sunrise. — 1st, G. Frank Smith, Meredith.

Charles Downing. — 2d, J. M. Neal & Son, Meredith.

White Star. — 1st, Morrill Moore, Tilton; 2d, J. F. Bailey, Sanbornton.

Early Maine. — 1st, A. H. Colby, Tilton; 2d, G. Frank Smith, Meredith.

Belle of Brunswick. — 1st, H. B. Holman, East Tilton; 2d, George W. Elkins, East Tilton.

Welcome. — 1st, H. B. Holman, East Tilton.

Early Six Weeks. — 2d, H. B. Holman, East Tilton.

New Queen. — 1st, Stanley H. Abbott, Wilton; 2d, J. B. Calef, Sanbornton.

Bliss Triumph. — 1st, W. F. Payne, Sanbornton; 2d, George W. Elkins, East Tilton.

Lady Finger. — 1st, Abbie G. Durgin, Tilton.

Blush. — 1st, Abbie G. Durgin, Tilton.

Polaris. — 1st, W. D. Tuttle, East Andover; 2d, G. Frank Smith, Meredith.

Parson's Prolific. — 1st, J. M. Neal & Son, Meredith.

Woodbury's White. — 2d; J. M. Neal & Son, Meredith.

Alexander Prolific. — 1st, William F. Payne, Sanbornton.

Rural New Yorker. — 1st, G. Frank Smith, Meredith.

PUMPKINS.

1st, L. M. French, Tilton; 2d, Morrill Moore, Tilton.

Sweet Pumpkins. — 1st, Charles H. Foss, Tilton; 2d, Byron Shaw, Franklin Falls.

PEPPERS.

1st, L. A. Moore, Tilton.

SQUASHES.

Hubbard. — 1st, J. L. Kelley, Franklin; 2d, H. O. Mathews, Concord.

Bay State. — 1st, J. F. Bailey, Sanbornton.

Marrow. — 1st, H. B. Holman, East Tilton; 2d, John F. Leighton, Franklin Falls.

Turban. — 1st, M. C. Foster, Canterbury; 2d, George W. Elkins, East Tilton.

Mammoth. — 1st, L. M. Streeter, Manchester; 2d, Reed P. Silver, Manchester.

Dewing. — 1st, J. F. Bailey, Sanbornton.

Awarding committee. — E. C. Hutchinson, Edgar Gregory, C. W. Stone.

DAIRY.

BUTTER.

Dairy prints. — 1st, F. W. Foster, Hill; 2d, Mrs. John M. Pulsifer, Plymouth; 3d, G. H. Wadleigh, Tilton; 4th, A. H. Colby, Tilton.

Dairy tubs. — 1st, Henry C. Smith, Plymouth; 2d, Mrs. John M. Pulsifer, Plymouth; 3d, Mrs. L. M. French, Tilton; 4th, Mrs. J. W. Farr, Littleton.

CHEESE.

Domestic. — 1st, T. S. Pulsifer, Plymouth; 2d, Henry C. Smith, Plymouth; 3d, T. S. Pulsifer, Plymouth; 4th, Mrs. L. A. Moore, Tilton.

Awarding committee. — T. D. Curtis.

BREAD (HOME MADE).

White. — 1st, Mrs. C. W. Whicher, Tilton; 2d, Mrs. G. H. Wadleigh, Tilton; 3d, Katie F. Hill, Tilton.

Brown. — 1st, Mrs. C. W. Whicher, Tilton; 2d, Mrs. John M. Pulsifer, Plymouth; 3d, Mrs. S. D. Weeks, Hill.

Graham. — 1st, Mrs. S. D. Weeks, Hill; 2d, Ida L. Frost, Webster.

Awarding committee. — Mrs. H. A. Hill, Mrs. F. M. Hunt, Mrs. L. M. French.

CANNED FRUITS AND PRESERVES.

CANNED FRUIT.

General exhibit. — 1st, Mrs. T. C. Sweatt, Webster.

Peaches. — 1st, Mrs. T. C. Sweatt, Webster.

Apples. — 1st, Ella Drake, New Hampton.

Plums. — 1st, Mrs. G. W. Sanborn, Lakeport.

Pears. — 1st, Mrs. Electa A. Pressey, South Sutton.

Strawberries. — 1st, Mrs. Addie E. Taylor, Tilton.

Raspberries. — 1st, Mrs. Addie E. Taylor, Tilton.

Quinces. — 1st, Mrs. T. C. Sweatt, Webster.

Cherries. — 1st, Mrs. G. W. Sanborn, Lakeport.

Tomatoes. — 1st, Mrs. S. D. Weeks, Hill.

Blackberries. — 1st, Mrs. S. D. Weeks, Hill.

PRESERVES.

- Plums. — 1st, Mrs. G. W. Sanborn, Lakeport.
Pears. — 1st, Mrs. T. C. Sweatt, Webster.
Strawberries. — 1st, Mrs. T. C. Sweatt, Webster.
Raspberries. — 1st, Mrs. T. C. Sweatt, Webster.
Cherries. — 1st, Mrs. T. C. Sweatt, Webster.
Jar of Assorted Pickles. — 1st, Mrs. G. W. Sanborn, Lakeport.
Bottle of Tomato Catsup. — 1st, Ida L. Frost, Webster.

JELLY.

- Quince. — 1st, Mrs. T. C. Sweatt, Webster.
Apple. — 1st, Mrs. Electa A. Pressey, South Sutton.
Grape. — 1st, Mrs. T. C. Sweatt, Webster.
Currant. — 1st, Mrs. S. D. Weeks, Hill.
Blackberry. — 1st, Mrs. T. C. Sweatt, Webster.
Raspberry. — 1st, Mrs. Addie E. Taylor, Tilton.
Pineapple. — 1st, Mrs. Addie E. Taylor, Tilton.
Blackberries. — 1st, Mrs. Addie E. Taylor, Tilton.

Awarding committee. — Mrs. H. A. Hill, Mrs. E. M. Hunt, Mrs. L. M. French.

BEES, HONEY, AND SUGAR.

BEES AT WORK.

- 1st, Charles H. Foss, Tilton.

HONEY IN COMB.

- 1st, William H. Straw, Short Falls; 2d, Charles H. Foss, Tilton.

MAPLE SUGAR.

- 1st, T. S. Pulsifer, Plymouth; 2d, Noah Farr, Littleton.

MAPLE SYRUP.

- 1st, Mrs. G. W. Sanborn, Lakeport; 2d, Mrs. Stephen Hersey, Sanbornton.

- Awarding committee. — C. W. Bedell.

PAINTINGS.

General exhibit. — 1st, Helen L. Squire, Manchester; 2d, Mabel E. French, Tilton.

Animals in oil. — 1st, Miss Stella E. Tuttle, East Andover.

Still life in oil. — 1st, Miss Helen L. Squire, Manchester.

On china. — 1st, Helen L. Squire, Manchester.

Flowers in oil. — 1st, Emma E. Fling, North Londonderry; 2d, Mrs. F. H. Flanders, East Andover.

Landscape in oil. — 1st, Mrs. B. C. Young, East Tilton; 2d, Mabel E. French, Tilton.

Painted banner. — 1st, Mabel E. French, Tilton; 2d, Mrs. S. D. Weeks, Sanbornton.

Painted plaque. — 1st, Mrs. George W. Morrill, Gilford; 2d, Helen L. Squire, Manchester.

On silk or satin. — 1st, Mrs. Frank Hill, Tilton; 2d, Helen L. Squire, Manchester.

On plush. — 1st, Josie B. Osgood, Sanbornton.

On felt. — 1st, D. B. Sanborn, Sanbornton; 2d, Mrs. C. W. Bedell, Littleton.

Crayon portrait. — 1st, Albert Saltmarsh, Concord; 2d, Mrs. F. D. Gilman, East Tilton.

Crayon landscape. — 1st, E. C. Weeks, Hill.

Charcoal sketch. — 1st, Mary A. Rowell, Franklin.

Awarding committee. — M. Eva Dearborn, Mrs. F. H. Flanders, Miss Mary A. Rowell.

NATURAL HISTORY.

Stuffed birds. — 1st, Ned Dearborn, Tilton; 2d, R. Batchelder, Northfield Depot.

Stuffed animals. — 1st, Ned Dearborn, Tilton.

Native woods. — 1st, Ned Dearborn, Tilton.

Herbarium. — 1st, Bertha M. Sanborn, Franklin Falls.

Awarding committee. — C. H. Pettee.

NEEDLEWORK AND EMBROIDERY.

General exhibit of fancy work. — 1st, Mrs. C. W. Bedell, Littleton.

Cotton or linen embroidery. — 1st, Mrs. S. W. Sweatt, New Hampton.

Silk embroidery. — 1st, Mrs. Elmer D. Kelley, Franklin Falls; 2d, Alice H. Moore, Bristol.

Kensington embroidery. — 1st, Mrs. Frank Hill, Tilton.

Crochet work. — 1st, Mrs. Frank H. Prescott, Auburn; 2d, Annie M. Fowler, Short Falls.

Hand-knit work. — 1st, Mrs. Mary W. Gile, Tilton.

Hand-made lace. — 1st, Helen L. Squire, Manchester; 2d, Mrs. S. W. Sweatt, New Hampton.

Darned lace. — 1st, Mrs. Lula G. Piper, Auburn; 2d, Miss Clara B. Gove, Gilford.

Outline work. — 1st, Mrs. S. W. Sweatt, New Hampton; 2d, Mary Kelley, New Hampton.

Mexican work. — 1st, Katie F. Hill, Tilton; 2d, Mrs. Ida M. Clark, Wolfeborough.

Piano cover. — 1st, Mrs. Frank Hill, Tilton; 2d, Mattie Alexander, Meredith.

Table cover. — 1st, Mrs. Stella Dickerman, New Hampton; 2d, Mary Kelley, New Hampton.

Table scarf. — 1st, Miss Swett, Hanover; 2d, Mrs. A. Huntoon, Wing Road.

Bureau scarf. — 1st, Mrs. Reed P. Silver, Manchester; 2d, S. W. Taylor, Tilton.

Picture scarf. — 1st, Mrs. C. W. Bedell, Littleton; 2d, Mrs. S. W. Taylor, Tilton.

Etching on silk. — 1st, Mrs. C. W. Bedell, Littleton.

Etching on linen. — 1st, Mrs. S. W. Sweatt, New Hampton.

Toilet set. — 1st, Julia A. Gilman, Wolfeborough; 2d, Mrs. E. R. Kellogg, Hanover.

Photograph case. — 1st, Elmer E. Fling, North Londonderry; 2d, Mrs. C. W. Bedell, Littleton.

Tray cloth. — 1st, Mrs. Clifford, Hanover; 2d, Mrs. Ida M. Clark, Wolfeborough.

Felt lambrequin. — 1st, Alice H. Moore, Bristol.

Silk lambrequin. — 1st, Mrs. Bridgeman, Hanover.

Pillow sham. — 1st, Minnie Maloon, Meredith; 2d, Kate T. Piper, New Hampton.

Toilet cushion. — 1st, Mrs. Cora Drake, New Hampton; 2d, Mrs. C. W. Bedell, Littleton.

Crocheted lace. — 1st, Mrs. Cora Drake, New Hampton; 2d, Ella Drake, New Hampton.

Hand bag. — 1st, Mrs. Lucy Lang, Meredith; 2d, Kate T. Piper, New Hampton.

Work bag. — 1st, Mrs. Addie Smith, Meredith; 2d, Mrs. D. B. Sanborn, Sanbornton.

Infant's basket. — 1st, Mrs. Frank Hill, Tilton.

Hand-knit hose. — 1st, Mrs. W. A. Bachelder, East Andover; 2d, Mrs. Mary W. Gile, Tilton.

Hand-knit wool mittens. — 1st, Mary W. Gile, Tilton; 2d, Mrs. C. W. Bedell, Littleton.

Specimen of darned hose. — 1st, Mrs. M. D. R. Baker, Tilton; Mrs. Mary W. Gile, Tilton.

Specimen patching. — 1st, Mrs. Mary W. Gile, Tilton; 2d, Mrs. M. D. R. Baker, Tilton.

Jewel box. — 1st, Mrs. C. W. Bedell, Littleton; 2d, Myra L. Sweatt, Webster.

Cotton tidy. — 1st, Mrs. S. W. Taylor, Tilton; 2d, Mrs. O. M. Carr, Meredith.

Linen tidy. — 1st, Kate T. Piper, New Hampton; 2d, Mrs. Stella Dickerman, New Hampton.

Silk tidy. — 1st, Gertie B. Holman, Tilton; 2d, Mrs. Pet-tee, Hanover.

Felt tidy. — 1st, Stella Dickerman, New Hampton; 2d, A. J. Ferrin, New Hampton.

Sofa pillow. — 1st, Annie Wadleigh, Meredith; 2d, Kate T. Piper, New Hampton.

Apron. — 1st, Mrs. Reed P. Silver, Manchester; 2d, Ida Sanborn, New Hampton.

Handkerchief case. — 1st, Myrtie A. Hill, Hill; 2d, Annie L. Derby, Manchester.

Exhibit made by a Patron under seventeen years of age. — 1st, Ella Drake, New Hampton.

Tidy made by a girl eleven years of age. — 1st, Entered by Mrs. Frederick Allen, Manchester.

Japanese panel. — 1st, Mrs. D. B. Sanborn, Sanbornton.

Awarding committee. — E. J. Gilchrist, E. M. Tuttle.

QUILTS, AFGHANS, RUGS, AND RAG CARPETS.

Crazy silk quilt. — 1st, Mrs. A. Huntoon, Wing Road.

Crazy cotton quilt. — 1st, Mrs. F. H. Flanders, East Andover.

Log cabin cotton quilt. — 1st, Martha A. Foss, Tilton.

Knit quilt. — 1st, Mrs. W. A. Bachelder, East Andover.

Calico patchwork quilt. — 1st, D. B. Sanborn, Sanborn-ton; 2d, W. S. Putney, Webster.

Worsted quilt. — 1st, Mrs. E. C. Cotton, Jefferson; 2d, Martha A. Foss, Tilton.

Outline quilt. — 1st, Miss Warden, Hanover; 2d, E. N. Vickery, Meredith Centre.

Afghans. — 1st, Mary Kelley, New Hampton; 2d, Mrs. C. C. Rogers, Tilton.

Drawn rugs. — 1st, Miss Minnie Foss, Tuftonborough; 2d, Susie Gilman, Meredith.

Braided rugs. — 1st, Mrs. Emily Preston, Auburn; 2d, Mrs. C. E. King, Hazen Junction.

Ravelled rugs. — 1st, Mrs. G. W. Sanborn, Lakeport.

Chenille rugs. — 1st, Susie Gilman, Meredith.

Rag carpet. — 1st, Alida M. Cogswell, Tilton; 2d, Mrs. Childs, Hanover.

Awarding committee. — L. A. Dyer, Mrs. Charles McDaniel, Kate Forest.

PLANTS AND FLOWERS.

Potted plants. — 1st, Martha A. Foss, Tilton; 2d, Frank Dow, North Epping.

Cut flowers. — 1st, Ellen P. Shaw, Franklin Falls; 2d, Frank Dow, North Epping.

Dahlias. — 1st and 2d, Mrs. E. N. Vickery, Meredith Centre.

Verbenas. — Ellen P. Shaw, Franklin Falls.

Asters. — Mrs. L. A. Moore, Tilton; 2d, Mrs. O. M. Carr, Meredith.

Geraniums. — 1st, Ellen P. Shaw, Franklin Falls; 2d, Mrs. E. N. Vickery, Meredith Centre.

Sweet peas. — 1st, Frank Dow, North Epping.

Pansies. — 1st, L. M. French, Northfield; 2d, Mrs. W. J. Durgin, Tilton.

Pinks. — 1st, Ellen P. Shaw, Franklin Falls; 2d, Mrs. E. N. Vickery, Meredith Centre.

Awarding committee. — Mrs. D. B. Sanborn, Miss Kate F. Hill, Mrs. A. L. Dearborn.

SPEED DEPARTMENT.

HORSES AND COLTS.

Foals of 1890. — One half mile, 2 in 3. — 1st, H. N. Clay, Laconia, "Bert C."; 2d, Sam Hodgdon, Meredith, "Inbred Falcon." Time — $2.02\frac{1}{2}$, 2.01.

Foals of 1889. — One mile, 2 in 3. — 1st, C. W. Davis, Dover, "Millie Beauvoir"; 2d, N. E. Martin, Concord, "New Flower"; 3d, G. W. Silver, Penacook, "Bonner Steele"; 4th, W. F. Daniell, Franklin, "Much Ado." Time — $2.50\frac{3}{4}$, $2.42\frac{1}{4}$, $2.38\frac{1}{4}$, $2.40\frac{1}{2}$, $2.40\frac{1}{2}$.

Foals of 1888. — One mile, 3 in 5. — 1st, C. G. Blanchard, Concord, "Vik"; 2d, C. F. Piper, Wolfeborough, "Young Harbinger." Time — 2.47, 2.46, 2.50.

2.50 class. — One mile, 3 in 5. — 1st, S. K. Boyce, Canterbury, "Charlie R."; 2d, C. T. Gordon, Bristol, "Roxie B."; 3d, C. W. Davis, Dover, "Woodburn Wilkes." Time — $2.37\frac{1}{2}$, $2.35\frac{3}{4}$, $2.39\frac{1}{4}$.

Three-minute class. — One mile, 3 in 5. — 1st, George F. Kelley, Gilmanton, "Alcoe"; 2d, S. K. Boyce, Canterbury, "Ariel"; 3d, C. F. Piper, Wolfeborough, "J. L. P." Time — $2.53\frac{1}{4}$, $2.43\frac{1}{4}$, $2.42\frac{1}{2}$.

2.30 class. — One mile, 3 in 5. — 1st, J. E. Marston, Pittsfield, "Baron"; 2d, J. H. Taylor, Penacook, "Maggie M."; 3d, J. J. Bradley, Nashua, "Fred O." Time — $2.31\frac{1}{2}$, $2.31\frac{1}{2}$, 2.33 , 2.33 , 2.32 .

Stallion class. — One mile, 3 in 5. — 1st, C. W. Davis, Dover, "Woodburn Wilkes"; 2d, J. E. Kent, Newmarket, "Cromwood." Time — 2.37 , $2.34\frac{1}{2}$, $2.35\frac{1}{2}$, 2.39 , $2.38\frac{1}{4}$.

Named race. — One mile, 3 in 5. — 1st, C. P. Giddings, Nashua, "Pilot Boy"; 2d, J. E. Marston, Pittsfield, "Jerry Almont"; 3d, C. M. Record, Laconia, "Dr. Smith"; 4th, C. F. Flagg, Manchester, "Eastern Boy." Time — $2.29\frac{1}{2}$, $2.27\frac{1}{2}$, 2.30 , $2.26\frac{1}{4}$, $2.28\frac{3}{4}$.

Judges. — T. O. King, C. H. Bowles, F. H. Foster.

N. J. BACHELDER,
Secretary.

NEW HAMPSHIRE AGRICULTURAL EXPERIMENT STATION.

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BULLETIN No. 15.*

PATENT CATTLE FOODS.

The analyses made by the station chemist and reported below are very suggestive to any one who will observe the large quantities of so called "Concentrated Foods" that are

*The following bulletins have been issued by the Experiment Station since our previous report was made, and are of such value that we continue the feature of publishing them entire.

piled in the storehouses of many if not most of our grain dealers. That large quantities are sold no one can doubt, and we know of instances where careful men have been deceived and have purchased considerable quantities, even to the extent of a ton or more of some one of these frauds, paying more than one hundred dollars per ton, and the fact that such an imposition can be practiced naturally leads to the question, cannot some law be placed on our statutes which shall effectually prevent such swindling?

“Quack horse doctors” and “concentrated cattle food” manufacturers are twins, and they flourish, not on the ignorance of farmers, but on that lingering remnant of “old times,” which made saltpetre and sulphur the universal cure-all for horses and cattle. So far as their food value is concerned the foods below reported are worth only from twenty to twenty-five dollars per ton, and while they may be relished by cattle, owing chiefly to the salt they contain, still it would be more economical to buy good corn meal, middlings, cotton seed, etc., at the market price and then furnish the necessary salt at market rates, than to pay such prices as these mixtures are sold for; and so far as the medicinal claim is concerned, we have only to say, that the day will come when cattle and horses will be intelligently treated for diseases, and even the treatment of a “quack” is better, and certainly cheaper, than the wholesale use of mixtures of unknown composition.

CHEMICAL COMPOSITION.

F. W. MORSE.

Samples of three different cattle foods, or condition powders, which have been extensively sold in this State, were bought in the open market and subjected to a chemical analysis. The names of these foods were respectively: Pratt's Food, Weston's Condition Powders, and Climax Food. The results of analysis were as follows:

PRATT'S FOOD.

Manufactured at Philadelphia, Pa. Price, 75 cents per 12 pounds, or \$6 per 100 pounds.

This food was claimed in the circular to be purely vegetable, to contain no mineral or other poison, and to be neither a medicine nor condition powder. The last claim was well founded, as the following analysis shows. The "food" appears to be wheat middlings, to which has been added some fenugreek and common salt. The analysis shows a composition very much like wheat bran or middlings, with a high percentage of ash, owing to the addition of salt.

The composition of wheat middlings is given in comparison with the composition of the "food."

	Pratt's Food.	Wheat Middlings.
Water	10.77	12.1
Ash	6.27	3.3
Crude proteine	14.42	15.6
Crude fiber	5.37	4.6
Nitrogen-free extract	56.25	60.4
Fat	6.92	4.0

The composition of middlings is taken from the Experiment Station Record, vol. 2, No. 12.

A water solution of the sample was prepared and the only soluble mineral matter found was common salt, of which the food contained 1.9 per cent.

It was not possible to determine the amount of fenugreek present, the odor of which was noticeable.

WESTON'S CONDITION POWDERS.

Depot in New York City. Price, 50 cents per package containing three pounds.

This was claimed to be a "medicinal horse, cattle, and poultry food." It was also claimed to contain no saltpetre, resin, antimony, or arsenic, and to be purely vegetable.

In appearance, it resembled a mixture of corn meal and cotton-seed meal, and it had a saline taste and strong odor of fenugreek. Below is its analysis compared with the composition of corn meal:

	Weston.	Corn Meal.
Water	10.80	10.9
Ash	8.08	1.5
Crude proteine	15.53	10.5
Crude fiber	3.33	2.1
Nitrogen-free extract	56.79	69.6
Fat	5.46	5.4

The figures for corn meal are from Experiment Station Record, vol. 2, No. 12.

Weston's food contains more proteine or nitrogenous matter and more ash than corn meal.

The water solution contained an amount of chlorine equivalent to 4.70 per cent of common salt, and also showed a trace of sulphuric acid. No other mineral matter was found.

CLIMAX FOOD.

Manufactured at Burlington, Vermont. Price, \$1 per 12½ pounds, or \$8 per 100 pounds.

The circular claimed that "it is not a medicine, but a concentrated food." There were no claims made about its composition.

In appearance it resembled a mixture of fine wheat middlings and wheat screenings, together with a small quantity of caraway or fennel seeds and small bits of substance like butter-nut or elm bark. It had, like the other samples, a strong saline taste and odor of fenugreek. Its chemical composition was as follows, and is shown in comparison with the figures for cotton-seed meal, which is a really concentrated food, taken from the same source as the figures for middlings and corn meal.

	Climax.	Cotton-seed Meal.
Water	9.26	8.2
Ash	18.09	7.2
Crude proteine	12.74	42.3
Crude fiber	5.60	5.6
Nitrogen-free extract	53.08	23.6
Fat	3.23	13.1

This comparison shows that the Climax has only its extremely high percentage of ash to warrant a claim to being a concentrated food. The Climax also contained 5.59 per cent of sulphur, and in the water solution were found, chlorine, 5.92, sulphuric anhydride, 2.53, and sodium oxide, 8.54 per cent, together with traces of potassium and magnesium and a large amount (qualitatively) of nitric acid. From these data it was calculated that the food might have contained the following substances:

Sodium chloride, or common salt	. 9.77 per cent.
Sodium sulphate, or Glauber's salt	. 4.50 per cent.
Sodium nitrate, or Chili saltpetre	. 3.84 per cent.

From these analyses it is evident that the claims of the manufacturers, with regard to concentrated foods, are without foundation, as neither of the three will approach cotton-seed meal in the percentage of proteine and fat. The medicinal substances found are of the cheapest kind. The average price per pound, at which they can be bought in the market, is not so high as the price per pound of the foods.

Fenugreek, the odor of which was very strong in each mixture, is thus spoken of in the "National Dispensary": "It possesses hardly any other than emollient properties and is used only for poultices."

The "Treasury of Botany" speaks of it as follows: "It is the principal ingredient in most of the quack nostrums, which found so much favor amongst ignorant grooms and horse-keepers, and is largely used for flavoring the so called concentrated cattle foods, and for rendering damaged hay palatable."

In conclusion, it is hoped that the people of this State will be cautious about paying exorbitant prices, like eight dollars per one hundred pounds, for so called "concentrated cattle foods" when cotton-seed and gluten meals can be purchased for one sixth of that price, and sulphur, salts, etc., for a few cents per pound.

BULLETIN No. 16.

EFFECT OF FOOD ON THE COMPOSITION OF BUTTER.

PART I.

In May, 1891, this station issued Bulletin No. 13, in which the above subject was touched upon, but no definite conclusions were given. Since then the work has been carried on as opportunities have occurred, and a variety of rations have been tried with interesting and, we hope, valuable results. Nearly all these rations were such as may be fed on any farm in the State, and an effort has been made to find out that ration which would most probably produce the best butter.

The experiments may be divided into two series. In the first series, constant amounts of hay and ensilage were used in all the rations, while the amounts and kinds of grain were varied. In the second series, the quantities of ensilage and grain remained the same in all rations; but the kind and quantity of hay or dry fodder was changed.

The cows used in the experiments were of different breeds, and were in different stages of lactation; but the influences of those characteristics were either neutralized or accounted for in the end. For convenience the two series will be described separately.

THE FIRST SERIES

was begun May 19, 1891, and continued through the following June and July.

THE COWS

are described in the following table, which shows the arrangement in groups, breed, and length of time in milk:

Group I.	{ Aurora, 2nd.	Shorthorn.	Milked since Mar., '91.
	{ Clio.	Ayrshire.	Milked since Aug., '90.
Group II.	{ Duchess of Hanover.	Shorthorn.	Milked since Mar., '91.
	{ Frost.	Ayrshire.	Milked since Sept., '90.
Group III.	{ Chinchilla.	Ayrshire.	Milked since April, '91.
	{ Maramee.	Holstein.	Milked since May, '90.

Group IV.	{	Duchess.	Shorthorn. Milked since Sept., '90.
		Duchess, 2nd.	Shorthorn. Milked since June, '90.

THE ANALYSIS OF THE BUTTER

was confined to the determination of the volatile, fatty acids and the iodine absorption of the purified butter fat. This course was pursued because the fat is that part of the butter which is least influenced by the processes of the dairyman, and therefore best shows the effect of the food upon the cow. Furthermore, the flavor of butter undoubtedly depends in a great measure upon the quantity of volatile fatty acids present in the butter fat, and its firmness has been shown to be closely connected with the amount of oleic acid, which in its turn has been shown to be related to the amount of iodine absorbed by the butter fat. In general, a butter of a high flavor has a larger amount of volatile acids than one of low flavor, and a soft butter absorbs a greater amount of iodine than a hard butter.

THE GROUPS WERE FED

in the first period of this series, a ration containing mixed grain consisting of equal parts of corn meal, cotton-seed meal, gluten meal, and middlings. In the second and third periods, groups I and II were fed to compare the relative effects of corn meal and gluten meal, while groups III and IV were used to find out the action of cotton-seed meal. After the first three periods, the groups were broken by dropping Aurora, Clio, Frost, and Maramee from the experiment, and the series was continued with the remaining cows, individually. But as the cows had been tested individually in the previous periods, as well as in groups, the change would not affect the results.

THE COMPOSITION OF THE FEEDING STUFFS

was determined by analyzing a part of them, and by reference to the table in Bulletin No. 4, page 16, for the remainder. The results of the analyses are shown in the following table:

	Water.	Ash.	Crude proteine.	Crude fiber.	Nitrogen- free extract.	Fat.	Nutritive ratio.
Corn meal.....	14 25	1.15	8 96	1.69	70.19	3 76	1:8.55
Cotton-seed meal.....	8.52	6 91	41.44	7.00	23 40	12.73	1:1 35
Cream gluten meal.....	8.22	1 84	36 98	1.55	32 59	16.12	1:1.82
Wheat gluten meal*.....	7.58	1.03	82 72	0.25	7.41	0 95	1:0 12

*From Atlantic Starch Works, Brooklyn, N. Y.

THE COMPOSITION OF THE RATIONS

is shown in detail in the next table, which gives the amount of food used for a cow weighing one thousand pounds. Each ration is designated at the top of the column by a letter (a, b, c), which serves to distinguish it in the succeeding tables where the effect of the food on the butter is shown.

THE NEXT TABLES

in order give the details of feeding periods, with the ration fed, the date of taking the sample, the group or cow, and composition of the butter. The figures for volatile acids signify the number of cubic centimeters of deci-normal barium hydroxide solution, which are equivalent to the volatile acids in five grammes of butter fat. The iodine number means the number of parts of iodine absorbed by one hundred parts of butter fat. (This explanation of the figures is given for the satisfaction of other chemists who may read this article, and is as clear as can be given in a few words.)

TABLE OF RATIONS.

Pounds of Food per 1,000 pounds live weight.

RATION.	a.	b.	c.	e.	g.	h.	j.
Ensilage	40.	40.	40.	40.	40.	40.	.....
Hay.....	5.5	5.5	5.5	5.5	.....	.....	.....
Grass .....	.....	.....	.....	.....	13.5	13.5	.....
Middlings	2.05	2.35	2.35	2.4	2.35	2.35	2.05
Corn meal.....	2.05	6.	.....	.....	6.	5.	2.05
Cotton-seed meal	2.05	.....	.....	7.25	.....	.....	2.05
Gluten meal.....	2.05	.....	5.3	.....	.....	.....	2.05
Wheat gluten...	.....	.....	.....	.....	.....	15¼ oz.	.....
Pasturage.....	.....	.....	.....	.....	.....	.....	ad libi- tum.
Nutritive ratio.	1: 5.2	1: 8.8	1: 4.5	1: 3.9	1: 7.5	1: 5.5	1: 3.4*

* Estimated.

TABLE SHOWING EFFECT OF FOOD. — GROUPS.

PERIOD OF FEEDING.	Ration.	Date of sample.	Group I.		Group II.		Group III.		Group IV.	
			Volatile acids.	Iodine number.	Volatile acids.	Iodine number.	Volatile acids.	Iodine number.	Volatile acids.	Iodine number.
Preparatory.	a	June 1	30.2	38.2	32.9	35.0	29.0	39.0	30.8	38.7
June 2	b	" 15	29.6	33.3	.....	.....	.....	.....	.....	.....
to	c	" 15	.....	.....	29.3	41.3	.....	.....	.....	.....
June 16.	e	" 15	.....	.....	.....	.....	.....	.....	24.4	34.7
June 16	c	" 29	27.1	42.1	.....	.....	.....	.....	.....	.....
to	b	" 29	.....	.....	29.0	31.6	.....	.....	.....	.....
July 2.	e	" 29	.....	.....	.....	.....	25.4	33.4	.....	.....

The careful inspection of the table for individuals shows plainly, in the case of the four cows continuing through the experiment, that volatile acids decrease and that the iodine number increases as the period of lactation advances. These facts have been noticed by so many observers that they may be regarded as following a natural law. The inspection also shows the variation in both constituents of the butter from different cows when they are fed upon the same rations. This is especially noticeable in the last series of samples when the cows were at pasture. The variations are due, no doubt, both to peculiarities of breeds or individuals, and to the period of lactation. By referring to the description of the cows, it will be seen that Duchess and Duchess, 2d, were of the same breed and in nearly the same stage of lactation. Duchess of Hanover and Chinchilla were also in nearly the same period of lactation, but were of different breeds.

The influence of breed may be left out in studying the effect of the food, but the influence of the period of lactation must be carefully considered.

It has already been mentioned that the rations in this series contained the same quantities of hay and ensilage, but varied in the kind and amount of grain.

IN THE PREPARATORY PERIOD,

as has also been mentioned, the ration (a) contained equal quantities of each grain, and served to show the variations due to breed and period of lactation, and also as a starting-point with which to compare the different rations.

CORN MEAL AND GLUTEN MEAL

were fed in rations (b) and (c) respectively, and were used with groups one and two and with the different cows individually. Ration (b) was fed to group one after (a), to group two after (c), and the individuals of the group, Aurora, Clio, Duchess of Hanover, and Frost, were tested separately at the same time; it was fed to Chinchilla after ration (c), the cotton-seed meal ration. In no case has it changed the volatile

acids from their natural decrease, but in each case the iodine number has been decreased, which is opposed to the natural progress of lactation and must be due to the food.

Ration (c) was fed to group I after (b), and to group II after (a), and the cows were also tried individually. In three trials it had no effect on the volatile acids; but the iodine number was increased so sharply that the increase must have been partly due to the food and not wholly to the advance of lactation. It was fed to Chinchilla after (b) and to Duchess and Duchess, 2d, after (e). These trials also showed the same action upon the iodine number, and gave an increase in the volatile acids likewise, which will be further mentioned.

COTTON-SEED MEAL

was fed in ration (e) to groups III and IV after (a), and the individuals of the groups Chinchilla, Duchess, and Duchess, 2d, were compared at the same time. The iodine number was very much *depressed* in each case and the volatile acids also, with the exception of Chinchilla. Now it may be noticed that the increase of volatile acids after feeding gluten meal (c) was in each case preceded by the feeding of cotton-seed meal (e), or (e) and (b).

THESE RESULTS ARE IN ACCORD

with those given in Bulletin No. 13, and therefore our observations all show that corn meal had no effect on the volatile acids; but *lowered the iodine number*; gluten meal affected the volatile acids only after they had been depressed by some other food, when it raised them, while the *iodine number* was *raised* in every case; cotton-seed meal *lowered both* volatile acids and iodine number.

GREEN GRASS WAS COMPARED WITH HAY

by feeding rations (g) and (h) after ration (b).

It was tried upon only one cow, Duchess of Hanover. Ration (g) was like ration (b), except that the hay of the latter was replaced by its equivalent of grass. This ration

caused no appreciable variation in the butter fat. Ration (h), which followed ration (g) had a portion of its corn meal replaced by wheat-gluten meal, a nearly pure albuminoid substance. The effect of this ration was to increase the volatile acids slightly; while the iodine number was slightly decreased. Ration (j) contained no grain, consisting wholly of pasture grass. A study of the samples from three of the four cows, showed no change in either volatile acids or iodine number which could not be attributed to the advance of lactation.

Grass *did not* in general, *affect* the *composition* of the *butter*, which fact corresponds with recent German investigations.

THE SECOND SERIES

of experiments was begun on January 2, 1892, with seven cows, and various kinds of hay or dry fodder were compared. The cows were arranged in four sets or groups as follows:

Group I.	{ Duchess.	Shorthorn.
	{ Duchess, 2d.	Shorthorn.
Group II.	{ Pilot's Lily.	Jersey.
	{ Princess Leto.	Jersey.
Group III.	Maramée.	Holstein.
Group IV.	{ Chinchilla, Jr.	Ayrshire.
	{ Frost, Jr.	Ayrshire.

The rations, as before remarked, contained the same kinds and quantities of grain, but varied in the amount and variety of hay. They were calculated from the table in Bulletin No. 4, of this station, and are given in the following table, where each ration is designated by a number at the top of the column.

TABLE OF RATIONS.

Pounds of Food per 1,000 pounds live weight.

RATION.	1	2	3	4	5	6	7
Ensilage	50	50	50	50	50	40	50
Middlings.....	2½	2½	2½	2½	2½	2½	1⅔
Gluten meal	1¼	1¼	1¼	1¼	1¼	1¼	.....
Cotton-seed meal.....	1¼	1¼	1¼	1¼	1¼	1¼	.....
Corn meal .....	.....	.....	.....	.....	.....	2½	3⅓
Mixed hay.....	5	.....	.....	10	.....	8	10
Oat hay.....	5	.....	.....	.....	10	.....	.....
Clover hay.....	.....	10	.....	.....	.....	.....	.....
Vetch hay .....	.....	.....	10	.....	.....	.....	.....
Nutritive ratio.....	1:6	1:5.2	1:4.7	1:6.2	1:5.8	1:6	1:9.8

THE FEEDING PERIODS

were three in number, the preparatory period of two weeks, the second period of two weeks, and the third period of four weeks.

THE SAMPLES OF BUTTER

were taken near the ends of the first and second periods, and in the middle and at the end of the third period. Following is the table showing the periods, rations, and composition of the butter, similar to the tables in the first series:

TABLE SHOWING EFFECT OF FOOD.

FEEDING PERIOD.	Ration.	Date of Sample.	Group I.		Group II.		Group III.		Group IV.	
			Volatile acids.	Iodine number.	Volatile acids.	Iodine number.	Volatile acids.	Iodine number.	Volatile acids.	Iodine number.
Preparatory. }	1	Jan. 12	30.5	34.4	28.9	26.4	31.0	31.5	27.8	32.7
January 14	2	" 27	33.4	33.7	.....	.....	.....	.....	.....	.....
to	3	" 27	.....	.....	29.2	28.3	.....	.....	.....	.....
	4	" 27	.....	.....	.....	.....	32.4	31.8	.....	.....
January 28.	5	" 27	.....	.....	.....	.....	.....	.....	27.4	32.9
January 28	4	Feb. 10	33.2	32.9	.....	.....	.....	.....	.....	.....
to		" 24	32.1	36.0	.....	.....	.....	.....	.....	.....
	6	" 10	.....	.....	30.2	27.7	.....	.....	.....	.....
		" 24	.....	.....	29.4	29.9	.....	.....	.....	.....
Febru'y 26.	7	" 10	.....	.....	.....	.....	30.0	30.4	.....	.....
		" 24	.....	.....	.....	.....	30.8	36.0	.....	.....
	2	" 24	.....	.....	.....	.....	.....	.....	28.0	35.7
			.....	.....	.....	.....	.....	.....	27.5	37.7

In the first five rations there are compared mixed hay or English hay, clover hay, dry oat fodder, and vetch hay. In the last two rations the nutritive ratio of the mixed hay ration (4) is widened by the addition of corn meal and dropping out gluten meal and cotton-seed meal.

THE PREPARATORY RATION,

or ration (1), contained mixed hay and oat fodder. The variation of the volatile acids and iodine number, due to other causes than food, may be seen in the table, along the first line.

Vetches (3) and oat fodder (5) were tried but once in each case. The former was fed to group II after (1) and the latter was fed to group IV in the same order. Neither produced any apparent change in volatile acids. Clover hay (2) was fed to groups I and IV, and in each case the volatile acids were increased, which is contrary to the observed facts for progress of

lactation, and should be attributed to the food. In the case of group IV there appears to be but a very slight increase, but in a month the advance of lactation usually lowers the volatile acids appreciably.

Mixed hay (4) was fed to groups I and III. With group III it followed the preparatory ration and increased the volatile acids; with group I it followed clover hay (2) and kept the volatile acids at the high point to which clover hay had raised them.

Rations (6) and (7) caused no appreciable change in the composition of the butter fat from the previous rations, unless the constancy of volatile acids with group II is considered equivalent to an increase, which may be attributed to the mixed hay.

In general, since the oat fodder was fed in the preparatory ration and in (5), it appeared in this series that it caused a lower amount of volatile acids in the butter fat, than was the case with clover hay or mixed hay.

The sinking of volatile acids and rising of the iodine number with the advance of lactation, was again seen in this series in the last period, where the two samples of butter were taken with an interval of two weeks between them. Group III was an exception in the case of the volatile acids.

There is to be noted in conclusion that some of the results of this scientific investigation are in accord with the practice of many dairymen who produce a high grade of butter. A favorite ration with them is corn meal and clover or mixed hay.

Corn meal has been shown to produce a butter fat with a low iodine number, corresponding to a hard, firm butter. Clover hay and mixed hay have produced a butter fat with a high figure for volatile acids, which is equivalent to a high flavor.

Nevertheless, corn meal and clover hay are not the only suitable foods for producing a firm, highly flavored butter, and the study of this bulletin should show other combinations even better.

EFFECT OF FOOD ON THE COMPOSITION OF BUTTER.

PART II.

The experiments described in the following pages were a continuation of those described in Part I, and were carried out for the purpose of throwing some light upon the action of different food constituents, as the proteids or albuminoids, starch and fat, upon the composition of the butter fat.

THE CONTINUATION OF THE FIRST SERIES

consisted of the comparisons of corn meal with gluten meal and corn starch, and comparisons of whole cotton seed with cotton-seed meal and cotton-seed oil.

Gluten meal represented the albuminoids of the corn meal, and also contained the fat. The whole cotton seed was ground to a coarse meal, which therefore contained the lint, hulls, oil, and albuminoids. Cotton-seed meal represented the albuminoids, as the hulls and oil are removed as thoroughly as possible, previous to the grinding. The cows were the same as described in the first part and need no description here.

THE COMPOSITION OF THE FEEDING STUFFS

has already been given in part, but for convenience in comparing them, they are repeated here in connection with the analysis of the cotton seed.

COMPOSITION OF FEEDING STUFFS.

	Water.	Ash.	Crude proteine.	Crude fiber	Nitrogen- free ex- tract.	Fat.	Nutritive ratio.
Corn meal.....	14.25	1.15	8.96	1.69	70.19	3.76	1:3.55
Cream gluten.....	8.22	1.84	39.68	1.55	42.59	16.12	1:1.82
Cotton-seed meal.....	8.52	6.91	41.44	7.00	23.40	12.73	1:1.35
Cotton seed.....	7.55	5.00	18.72	22.18	25.27	21.28	1:4.70

The starch was assumed to be pure, as was also the cotton-seed oil, and they were not analyzed.

THE FOLLOWING TABLES

are arranged as in the preceding part, to describe the rations and the results of the different trials. Some of the figures have already been used, but are repeated for greater convenience in studying the experiments.

TABLE OF RATIONS.

Pounds of Food per 1,000 pounds live weight.

Ration.	a	b	c	d	e	f	i	j
Ensilage.....	40	40	40	40	40	40	40	.....
Hay	5.5	5.5	5.5	5.5	5.5	5.5	5.5	.....
Middlings	2.5	2.35	3.35	2.25	2.40	2.25	2.35	2.05
Corn meal.....	2.5	6	.....	.....	.....	.....	.....	2.05
Gluten meal.....	2.5	.....	5.3	.....	.....	3.5	1.83	2.05
Cotton seed.....	.....	.....	.....	6.25	.....	.....	.....	.....
Cotton seed.....	2.5	.....	.....	.....	7.25	.....	.....	2.05
Cotton-seed oil.....	.....	.....	.....	.....	.....	oz. 13.5	.....	.....
Starch .....	.....	.....	.....	.....	.....	.....	3.4	.....
Pasturage.....	.....	.....	.....	.....	.....	.....	.....	ad lib- itum.
Nutritive ratio.....	1:5.2	1:8.8	1:4.5	1:7.1	1:3.9	1:6.2	1:8.4	*1:3.4

* Estimated.

FEEDING PERIOD.	Ration.	Date of sample.	Group III.		Group IV.		Chinchilla.		Duchess.		Duchess, 2d.	
			Volatile acids.	Iodine number.	Volatile acids.	Iodine number.	Volatile acids.	Iodine number.	Volatile acids.	Iodine number.	Volatile acids.	Iodine number.
Preparatory. } June 2 to	a	June 1	29.0	39.0	30.8	38.7	28.7	38.3	30.1	36.4	28.9	39.3
	d	" 9	.....	.....	.....	.....	20.6	34.2	.....	.....	.....	.....
	d	" 15	19.3	34.7	.....	.....	21.9	33.6	.....	.....	.....	.....
June 16. June 16 to	"	" 9	.....	.....	.....	.....	.....	.....	.....	.....	23.3	34.2
	e	" 15	.....	.....	24.4	34.7	.....	.....	23.5	33.7	21.4	34.5
	e	" 23	.....	.....	.....	.....	26.2	33.9	.....	.....	.....	.....
July 2. July 2 to	e	" 29	25.4	33.4	.....	.....	26.5	31.9	.....	.....	.....	.....
	d	" 23	.....	.....	.....	.....	.....	.....	.....	.....	20.1	32.6
	d	" 29	.....	.....	21.2	32.9	.....	.....	18.2	32.0	19.5	30.1
July 10. July 10 to	b	July 7	.....	.....	.....	.....	26.3	26.2	.....	.....	.....	.....
	b	" 9	.....	.....	.....	.....	24.9	25.7	.....	.....	.....	.....
	c	" 7	.....	.....	.....	.....	.....	.....	23.6	39.0	25.4	42.3
July 18. July 18 to	c	" 9	.....	.....	.....	.....	.....	.....	25.1	40.7	27.8	44.8
	c	" 12	.....	.....	.....	.....	26.6	33.8	.....	.....	.....	.....
	c	" 14	.....	.....	.....	.....	30.5	36.1	.....	.....	.....	.....
July 31. July 31 to	c	" 16	.....	.....	.....	.....	31.1	36.1	.....	.....	.....	.....
	f	" 12	.....	.....	.....	.....	.....	.....	21.6	35.0	.....	.....
	f	" 14	.....	.....	.....	.....	.....	.....	18.0	38.3	.....	.....
July 18. July 18 to	f	" 16	.....	.....	.....	.....	.....	.....	19.6	40.2	.....	.....
	i	" 12	.....	.....	.....	.....	.....	.....	.....	.....	25.3	38.1
	i	" 14	.....	.....	.....	.....	.....	.....	.....	.....	27.3	35.0
July 31. July 31 to	i	" 16	.....	.....	.....	.....	.....	.....	.....	.....	27.9	37.2
	"	" 20	.....	.....	.....	.....	29.1	36.7	17.6	36.9	25.6	38.8
	j	" 24	.....	.....	.....	.....	29.8	38.2	20.4	40.5	23.6	40.3
July 31. July 31	"	" 27	.....	.....	.....	.....	25.3	39.7	19.1	38.2	22.7	39.8
	"	" 31	.....	.....	.....	.....	26.5	39.8	22.5	40.4	21.3	41.2

THE COMPARISON OF COTTON SEED

with cotton-seed meal was made upon the groups III and IV, and three of the cows in the groups were tested individually.

With group III, the cotton-seed ration (d) preceded the cotton-seed meal (e).

The iodine number was steadily lowered; but, while cotton seed lowered the volatile acids from 29.0 to 19.3, the meal raised them from 19.3 to 25.4; the same phenomenon was also noticed with Chinchilla alone.

With group IV the order was reversed, and there was a steady decrease in both iodine number and volatile acids. The former decrease, as already explained, was contrary to the advance of lactation, while the decrease of volatile acids was so sharp that it must have been partly caused by the food. Comparing the rate of change in both constituents, for each substance, cotton seed influenced the composition of the butter more than the cotton-seed meal.

CORN MEAL WAS FED

to Chinchilla, in ration (b) after cotton-seed meal ration (e). The figures have already been mentioned, but attention is again called to the lowering of the iodine number and the non-interference with the natural decrease of the volatile acids.

GLUTEN MEAL, RATION (c)

was fed to Duchess and Duchess, 2d, after cotton seed (d), and to Chinchilla after (b). Part of these figures have been used before, and it will be recalled that the gluten meal increased the iodine number abnormally and also raised the volatile acids, when it followed a food which had caused them to decrease.

COTTON-SEED OIL

was fed in ration (f) combined with gluten meal, and followed gluten meal, ration (c), with Duchess.

There was a decided lowering of the volatile acids, judging by the preceding and following periods, which was apparently due to the oil; but the iodine number was not changed much. Applying the comparison with the preceding and following

periods, it appeared to have been, on the whole, slightly retarded from the normal rate of increase.

CORN STARCH

was combined with gluten meal in ration (i) in such proportion that the ration was equivalent to the corn meal ration (b).

It followed gluten meal (c) with Duchess, 2d, and produced the same effect as corn meal, decreasing the iodine number and causing no variation in the volatile acids.

THE CONTINUATION OF THE SECOND SERIES

was carried out with the cows Duchess, Maramee, and Princess Leto, which were used in the second series of Part I. The experiment consisted of trials of several oils or fats in rations containing a constant quantity of albuminoids and carbo-hydrates. The oils used in the series were corn or maize oil, cotton-seed oil, cocoa-nut oil, palm oil, commercial oleo oil, and commercial stearine. Since it was desired to observe especially the effect of corn oil and cotton-seed oil, the ration was compounded with a view to avoiding any of the products of cotton seed or corn, other than the oils, and for this purpose, clover and vetch hay, oat meal, and middlings, together with ensilage, were used for the preliminary feeding, and the trial rations were made by adding equal quantities of the oils to the preliminary ration.

THE DIFFERENT RATIONS

and the results of the trials are given in the succeeding tables :

TABLE OF RATIONS.

Pounds of Food per 1,000 pounds live weight.

RATION.	8	9	10	11	12	13	14	15	16
Ensilage	23½	23½	23½	23½	23½	23½	23½	23½	23½
Clover hay.....	7½	7½	7½	7½	11¼	11¼	11¼	11¼	11¼
Vetch hay.....	¾	¾	¾	¾					
Oat meal.....	¾	¾	¾	¾	¾	¾	¾	¾	¾
Middlings	¾	¾	¾	¾	¾	¾	¾	¾	¾
Palm oil.....		11 oz.							
Corn oil.....			11 oz.						
Cotton-seed oil.....				11 oz.				11 oz.	
Stearine						11 oz.			
Oleine.....							11 oz.		
Cocoa-nut oil.....									11 oz.
Nutritive ratio.....	1:5.9	1:6.7	1:6.9	1:7	1:6.2	1:6.9	1:7	1:7	1:6.9

FEEDING PERIOD.	Ration.	Date of sample.	Duchess.		Maramée.		Princess Leto.	
			Volatile acids.	Iodine number.	Volatile acids.	Iodine number.	Volatile acids.	Iodine number.
Preparatory.....	8	March 13	33.1	33.0	31.3	33.5	29.0	28.4
March 16	9	" 27	31.5	34.8				
to	10	" 27					28.4	33.1
March 31.	11	" 27			25.2	41.9		
March 31.	11	" 31			27.3	43.6		
March 27-31.....	12	" 31					27.6	32.3
March 31	13	April 14	28.0	35.6				
to	14	" 14					30.7	31.6
April 16.	15	" 27	29.6	37.6				
to	16	" 27					29.8	24.2
April 27.								
Pasture.....		May July	26 32.5 4 29.9	35 0 39.4			33 8 32.7	30 4 32.8

The inspection of the tables shows some interesting results, but owing to the small number of trials no law can be deduced from them.

PALM OIL

was fed to Duchess, immediately after the preparatory ration, in ration (9), and there was no change in the volatile acids or the iodine number from the normal progress of lactation. Stearine, ration (15), was next fed and produced no effect on the iodine number, but by comparing the volatile acids with the two preceding periods and with those following, especially the pasture period of July 4, nearly four months after the preparatory ration, it appeared that the volatile acids were decreased. By the same method of comparison, cotton-seed oil in ration (15) raised the iodine number, and while increasing the volatile acids over the stearine ration, did not make them of normal quantity. By the same line of reasoning, palm oil had a similar effect to cotton-seed oil, though less noticeable. Cotton-seed oil in ration (11), fed to Maramee after the preparatory period, showed a very decided action upon the volatile acids and iodine number, and in the same direction as when fed to Duchess.

Corn oil was fed to Princess Leto in ration (10) after the preparatory period. There was no effect on the volatile acids, but the iodine number rose abruptly from 28.4 to 38.1. The ration (12) fed to Princess was used because the vetch hay had become exhausted. The only change was in feeding clover hay instead of equal parts of clover and vetch. The result was to bring the iodine number back to a more normal amount. Oleine or oleo oil was next fed in ration (14) and produced a decided rise in the volatile acids, while the iodine number was slightly decreased. Cocoa-nut oil followed the oleine and caused a sharp decrease in the iodine number. With Princess Leto, the pasture periods show a peculiar condition with regard to volatile acids, insomuch that they are higher than in any period during the experiment, although from one to two months had elapsed.

SUMMING UP

the results of these trials, it was shown that the volatile acids were only slightly affected, but on the whole were decreased, by feeding fats. A comparison of the changes in the butter fat with the volatile acids of the fats used in the rations, showed a striking result, and the comparison is here given :

Oil.	Volatile acid.	Change in volatile acid of butter.
Cocoa-nut . . .	6.5	30.7 to 29.8 . . . — 0.9
Corn . . .	3.2	29.0 to 28.4 . . . — 0.6
Cotton-seed . . .	1.1	31.3 to 25.2 . . . — 6.1
Palm . . .	1.7	33.1 to 31.5 . . . — 1.6
Oleine . . .	2.0	27.6 to 30.7 . . . + 3.1
Stearine . . .	1.4	31.5 to 28.0 . . . — 3.5

With the exception of the oleine, which increased the volatile acids over the previous ration, the fats caused the volatile acids of the butter to vary in the order of their own contents of volatile acids.

The iodine number was more affected by feeding the fats, and here again was a striking coincidence, which is shown in the following comparison of the oils and their action.

Oil.	Iodine number.	Change in iodine number of butter.
Corn . . .	112.8	28.4 to 38.1 . . . + 9.7
Cotton-seed . . .	106.1	33.5 to 41.9 . . . + 8.4
Palm . . .	52.2	33.0 to 34.8 . . . + 1.8
Cocoa-nut . . .	7.1	31.6 to 24.2 . . . — 7.4
Oleine . . .	47.5	32.3 to 31.6 . . . — 0.7
Stearine . . .	24.1	34.8 to 35.6 . . . + 0.8

In this comparison it is shown that with the exception of the oleine the fats caused the iodine number in the butter to vary in accordance with their own iodine numbers.

IN CONCLUSION

it was found that of the constituents of corn meal, the gluten or albuminoids had the property of affecting the volatile acids in the butter fat, while the starch and oil affected the iodine

number, the former decreasing and the latter increasing it. Since gluten meal contained both oil and albuminoids, and the oil affected the iodine number as much as the gluten meal did, it was impossible to say that the albuminoids did or did not act on it.

Of the cotton-seed constituents, it was found that the oil and the meal, or nitrogenous part, affected the volatile acids alike; but the iodine number was raised by the oil and lowered by the meal.

When fed all together in the original grain, cotton seed produced the effect of the meal or nitrogenous matter; while corn produced the effect of the starch.

These trials with carbo-hydrates, albuminoids, and fats were not numerous enough to enable one to formulate a new theory from them or to overthrow old theories; but they do not agree with the theory that milk fat is formed from the albuminoids only of the food constituents, and that fats in the food do not enter into the fat of the milk.

F. W. MORSE, *Chemist*.

BULLETIN No. 17.

STOCK FEEDING.

The subject of winter feeding of live stock is of such vast importance to the farmer that at this time I venture to once more urge every farmer, young or old, to give it careful study; and, in the hope that there are many who would like to test a practical yet scientific method, this bulletin is sent to about eight thousand New Hampshire farmers, most of whom doubtless own stock of some kind.

It is designed to give plain, practical points which may be adopted, in part at least, by every farmer, if he is willing to profit by the experience of men whose business it has been to make careful investigation of the principles and laws of stock feeding.

At this point I want to ask every reader of this bulletin not to throw it aside, and say, "Oh, what is the use of feeding

by weight and measure? The old way of feeding is good enough." On the contrary, let me ask you to think for one moment whether or not it is reasonable to suppose that there is room for improvement in this as well as other departments of farm work. How many are there to-day who mow with the hand scythe, rake with the hand rake, reap with the sickle, or thresh with the flail? There has been great improvement in all the mechanical work on the farm; and is n't it reasonable to look for corresponding advancement in the feeding of the cattle? There has been improvement in the practice of farmers in this line, but not in the same degree that the methods of field work have improved. Farm stock can be fed by rule, if good judgment is used in carrying out the details. The laying out of a railroad requires a vast amount of work "on paper," theoretical work; but it takes a lot of common sense and practical every-day shrewdness to decide upon the most feasible route, and to overcome obstacles as they appear. So, in feeding, there are rules that are reliable, and are the roads to success; but they are not infallible, and must be used with good judgment.

There are feeding standards which tell us how much of the really valuable part of the fodder (i. e., the digestible constituents) is required daily by various classes of stock, and they are based upon actual feeding, and may be depended upon as substantially correct. With these any man may determine for himself what quantity of fuel (that is, food) will be required to get the best results from these living engines which are to produce milk, beef, pork, wool, eggs, etc.

The first step towards profitable feeding, then, is to know the quantity of digestible food required.

The "German Feeding Standards" are of inestimable value to the practical farmer, if only the farmer will make use of them; they give us the daily food required under most of the conditions commonly met with on the farm. The following table is a reprint from Bulletin 4 of this station:

Table A shows the pounds of digestible nitrogenous matter (albuminoids) and digestible starchy matter (non-albuminoids)

required daily for each one thousand pounds, live weight, of various animals, and the ratio of the former to the latter, known as the nutritive ratio.

TABLE A.

1,000 lbs. live weight require daily	Digestible albuminoids. lbs.	Non- albuminoids. lbs.	Nutritive ratio.
Oxen at rest.....	0.7	8.37	1:12
Oxen working.....	2.4	14.45	1:6
Oxen fattening.....	3.0	16.55	1:5.5
Cows giving milk.....	2.5	13.50	1:5.4
Horses, light work.....	1.8	12.70	1:7
Growing cattle.....	2.5	15.00	1:6
Sheep, for wool.....	1.2	10.80	1:9
Sheep fattening.....	3.0	16.45	1:5.5
Hogs fattening.....	4.0	24.00	1:6

HOW TO USE THIS TABLE.

The farmer will ask the question, What shall I do with this table? For a concise answer I would say, Use it just as your wife uses her cook book. It gives you the same information relative to feeding a cow that the cook book gives her when she makes cream pie — that is, it tells the amount and kinds of digestible material that a cow ought to have to produce good results. It does n't pretend to be the only combination from which good results may be expected any more than Hood's cook book pretends to have the only combination of cooking materials which will make cream pie, but it is based on hundreds of practical feeding experiments, and may be accepted by any farmer as a good, safe, practical guide to work by; and if every milk-producing cow in New Hampshire could be fed this winter by this table, there would be an increase of more than one fourth in the milk and butter produced. Now, is n't it worth trying?

ILLUSTRATION SHOWING HOW TO USE TABLE A.

One or two examples will aid those who want to give this matter a trial:

Suppose you have a cow whose live weight is 900 pounds, and are feeding for milk. From the table it appears that a

1,000-pound cow requires $2\frac{1}{2}$ pounds of albuminoids, and $13\frac{1}{2}$ pounds of non-albuminoids (starch, sugar, oil, etc.). A 900-pound cow requires $\frac{9}{10}$ as much. 2.5 (albuminoids) $\times 900 = 2,250.0 \div 1,000 = 2.25$ pounds albuminoids required by cow weighing 900 pounds; in the same way 13.5 pounds non-albuminoids $\times 900 = 12,150.0 \div 1,000 = 12.15$ pounds required. Another example:

Cow weighing 750 pounds. $2.5 \times 750 = 1,875 \div 1,000 = 1.87$ required. $13.5 \times 750 = 10,125 \div 1,000 = 10.12$ required.

The rule then is to multiply the amount found in the table for any kind of animal under consideration, by the live weight, and point off three places (i. e., divide by 1,000).

The live weight of the animal must in most cases be determined by good judgment, but right here let me say that a set of scales in the barn floor is one of the first steps towards successful farming. With this, guesswork gives place to definite knowledge, and farming becomes an interesting occupation. With the means at hand for knowing what is being produced in the field, and what results the fodder produces when fed, a man is in position to make his farm profitable; hence I would say to New Hampshire farmers, Get a set of scales, either three or five tons, and use them. The last suggestion is far more important than the first.

Now, having determined what is required daily by one or several animals, we must know how to supply that material in the most readily available and cheapest form. To do this we must know the composition of our feeding stuffs, and chemists have given us table B, which supplies that information.

TABLE B.

Feeding Stuff.

1,000 POUNDS OF, CONTAIN	Digestible.		Nutritive ratio.
	Albuminoids.	Non-albuminoids.	
Herd's-grass (timothy) hay.....	3.45	48.71	1:14
Red top hay.....	4.74	48.19	1:10
Mixed hay.....	3.71	47.61	1:12.8
Mixed hay and clover.....	4.85	46.40	1:9.5
Salt marsh hay.....	2.27	45.83	1:20
Clover hay.....	7.53	43.60	1:5.7
Vetch hay.....	9.20	37.67	1:4
Oat hay.....	4.85	44.83	1:9.2
Winter rye hay.....	10.30	51.70	1:5
Millet hay.....	4.67	45.43	1:9.7
Rowen.....	6.81	41.74	1:6.1
Oat straw.....	1.45	43.31	1:30
Bean vines.....	5.00	36.45	1:7.3
Corn stover.....	2.15	41.38	1:19
Ensilage (Northern corn).....	1.47	14.80	1:10
Ensilage (Southern corn).....	1.32	12.73	1:9.6
Ensilage (sweet corn).....	1.84	14.92	1:8
Pasture grass.....	2.50	10.90	1:4.4
Green rye.....	2.00	12.87	1:6.4
Potatoes.....	1.42	17.70	1:12.4
Sugar beets.....	1.50	7.81	1:6.5
Corn and cob meal.....	7.13	65.52	1:9.3
Corn meal.....	7.78	71.60	1:9.2
Barley meal.....	9.54	65.95	1:6.9
Oats, ground.....	9.90	58.16	1:5.9
Buckwheat, ground.....	7.70	66.71	1:8.7
Linseed, old process.....	28.12	53.21	1:1.9
Linseed, new process.....	28.57	44.30	1:1.5
Cotton-seed meal.....	31.36	42.26	1:1.3
Shorts.....	13.26	52.70	1:4
Middlings.....	13.35	57.72	1:4.3
Gluten.....	25.14	61.90	1:2.4
Brewers' grains, wet.....	4.73	16.22	1:3.4
Malt sprouts.....	18.36	52.18	1:2.8
Cow's milk, whole.....	3.00	14.00	1:4.6
Skimmilk.....	3.23	6.94	1:2.1
Buttermilk.....	2.90	4.50	1:1.5

HOW TO USE TABLE B.

The feeder who has accepted the fact that his 900-pound cow requires $2\frac{1}{4}$ pounds of albuminoids, and $12\frac{1}{7}$ pounds of non-albuminoids, next wants to supply that amount of food material, and he must make it up out of the fodder he has at hand or can buy; and here I want to say that I do not believe in following the rule blindly, or with the idea that it is absolutely accurate, for such is not the case. It is a good safe guide, and reasonably accurate, and to be followed within

reasonable limits, but variations are admissible, and often profitable, since the market price of grains and fodders varies, and hence grains which at one time are most profitable to use at another time may not be; here is where the ingenuity of the individual comes into play. A cow should have from 1 to $1\frac{1}{2}$ per cent daily of her live weight in hay, and about as much of any coarse fodder, like straw, corn fodder, swale hay, etc. With the present high price of hay, owing to a very short crop, it will prove profitable to use but little over the 1 per cent. If ensilage is used, take 5 per cent of the live weight.

RATION FOR COW WEIGHING 900 POUNDS.

	Albuminoids.	Non-albuminoids.
10 pounds mixed hay furnish .	0.37 pounds.	4.76 pounds.
10 pounds corn fodder furnish .	0.21 "	4.13 "
3 pounds corn meal (2 quarts) .	0.23 "	1.99 "
3 pounds cotton seed (2 quarts) .	0.97 "	1.26 "
$1\frac{1}{2}$ pounds gluten (1 quart) .	0.37 "	0.93 "
	<hr/>	<hr/>
Total	2.15 pounds.	13.07 pounds.
Required by standard	2.25 "	12.15 "

At present prices this ration would cost about 18 cents, and a trial of this one ration would convince most farmers, I am sure, that it pays to know what we are feeding.

RATION CONTAINING ENSILAGE.

Ensilage, 40 pounds	0.60 pounds.	5.6 pounds.
Hay, 5 pounds	1.19 "	2.4 "
Middlings, 4 pounds ($3\frac{1}{2}$ quarts) .	0.54 "	2.3 "
Corn meal, 2 pounds ($1\frac{1}{2}$ quarts) .	0.14 "	1.3 "
Gluten, 3 pounds (2 quarts) .	0.76 "	1.8 "
	<hr/>	<hr/>
Total	2.23 pounds.	13.4 pounds.
Required by standard	2.25 "	12.15 "

In each case above given, the method of adjusting the ration is simply to decide upon some quantity of hay, say 10 pounds. Now from table B it will be seen that 100 pounds of mixed

hay contain 3.7 pounds of albuminoids, and 47.6 pounds of non-albuminoids, and 10 pounds would contain 0.37 pound, and 4.76 pounds as given in ration. The same method holds for other constituents of the ration. The object desired is to get together a combination from the table which shall give a total of digestible albuminoids and non-albuminoids equal to that shown by the feeding standard. There are a few things which must be kept in mind in preparing rations: First, there must be bulky fodder, hay, ensilage, or coarse fodders; the rules above given will insure this. Second, the other constituents must be palatable, and the market price must be taken into consideration as well. It follows, then, that one of the most important things for the farmer to consider is the kind of grain to buy, for much of the grain that will be fed must be bought.

An important point in figuring a ration is to keep the proportion between albuminoids and non-albuminoids close to the standard of 1 to $5\frac{1}{2}$, though in this country of cheap corn we may with profit make this 1 to 6, or even 1 to $6\frac{1}{2}$; but at once the trouble is seen, if we try to use corn meal in too large quantities, because it is deficient in albuminoids, just as hay and ensilage and corn fodder are; but cotton-seed meal, gluten, middlings, and shorts are all rich in albuminoids, and here is where we must look for something with which to make up the deficiencies of our common fodder. Consequently it will prove more profitable to supplement our home-raised fodders with these highly nitrogenous foods. If for each hundred weight of corn meal bought, farmers would buy one hundred weight of either cotton seed or gluten and one hundred weight of middlings or shorts, there would be a great gain in results.

In conclusion, let me ask every reader of this bulletin to try just for one week a ration like those given, or, what would be better still, figure out one for himself, and see if it pays. Don't say that rations based on the feeding standards are worthless unless you have tried them and found them failures.

Don't say they are not worth trying; it won't cost you any-

thing to prove for yourself whether or not they are as good or better than the ration you are now feeding.

If the bulletins of this or any other experiment station are to be of any value to the farmers, it must be by making use of the suggestions which they contain; and I hope that this one may be the means of helping to a better understanding of the principles which govern the feeding of farm animals.

The accompanying chart is designed to be placed in some convenient place in the barn. It contains information, tables, etc., which will enable any one to figure out rations with a little study and effort; and its use means better results in nine cases out of ten. Don't leave it in the house; hang it up where you can see it every time you feed your cattle, and see if you cannot make it worth dollars and cents to you this winter.

The "Standard" mixtures given in the chart have been thoroughly tested, and are known to be well suited to New Hampshire, and by using them the work of the feeder is made easy.

I also reprint from Bulletin No. 4 full instructions for making a balance to weigh hay on. It is simple, not expensive, and does its work to perfection. Let the boys make one and try it.

Or, if a little more expense is not objectionable, buy a dial spring scale; then take six laths, and make a frame similar to the one described in the appendix, using cords to suspend it from the four corners in the same way, cover with coarse cotton cloth, and hang on the hook of the dial scale above mentioned. This is a more convenient form of weighing apparatus, and if any farmer in the State wants such a device, the station will undertake to furnish them at a cost not to exceed \$2.50 complete, and less if possible. I hope there will be a hundred farmers who will in some way, provide themselves with the necessary tools for feeding weighed and measured rations and note the results.

The scale above mentioned can also be used to weigh the milk of each cow, thus enabling any one to know exactly what results are obtained from the use of any particular ration.

STANDARD GRAIN MIXTURES.

No. 1.			No. 2.		
Corn meal . . .	100 lbs.		Corn meal . . .	200 lbs.	
Middlings . . .	100 "		Middlings . . .	400 "	
Cotton seed . . .	100 "		Gluten . . .	300 "	
No. 3.			No. 4.		
Corn meal . . .	300 lbs.		Corn meal . . .	200 lbs.	
Cotton seed . . .	300 "		Cotton seed . . .	300 "	
Gluten . . .	150 "		Shorts . . .	300 "	
No. 5.			No. 6.		
Gluten . . .	100 lbs.		Gluten . . .	100 lbs.	
Cotton seed . . .	100 "		Cotton seed . . .	200 "	
Shorts . . .	100 "		Shorts . . .	100 "	

STANDARD RATIONS FOR COWS WEIGHING 1,000 POUNDS.

No. 1.		No. 2.	
Hay . . .	11 lbs.	Hay . . .	11 lbs.
Corn fodder . . .	11 "	Corn fodder . . .	11 "
Grain mixture No. 3,	9 $\frac{1}{4}$ lbs., or 7 quarts.	Grain mixture No. 4,	10 $\frac{1}{2}$ lbs., or 10 $\frac{1}{2}$ quarts.
No. 3.		No. 4.	
Hay . . .	12 lbs.	Hay . . .	12 lbs.
Oat straw . . .	8 "	Oat straw . . .	8 "
Grain mixture No. 3,	9 lbs., or 7 quarts.	Grain mixture No. 4,	10 lbs., or 10 quarts.
No. 5.		No. 6.	
Ensilage, 50 lbs., or 2 bushels.		Ensilage, 50 lbs., or 2 bushels.	
Hay . . .	5 lbs.	Hay . . .	5 lbs.
Grain mixture No. 3,	7 $\frac{1}{2}$ lbs., or 5 $\frac{1}{2}$ quarts.	Grain mixture No. 4,	8 lbs., or 8 quarts.
No. 7.		No. 8.	
Ensilage, 30 lbs., or 5 pecks.		Ensilage, 30 lbs., or 5 pecks.	
Hay . . .	10 lbs.	Hay . . .	10 lbs.
Grain mixture No. 3,	8 lbs., or 6 qts.	Grain mixture No 4,	9 lbs., or 9 qts.

No. 9.		No. 10.	
Ensilage,	40 lbs., or 7 pecks.	Ensilage,	50 lbs., or 2 bushels.
Clover hay	. . . . 8 lbs.	Clover hay	. . . . 5 lbs.
Grain mixture No. 1,	8 lbs., or 6 quarts.	Grain mixture No. 3,	7 lbs., or 5½ quarts.
No. 11.		No. 12.	
Ensilage,	40 lbs., or 7 pecks.	Hay	. . . . 10 lbs.
Clover hay	. . . . 8 lbs.	Straw	. . . . 10 "
Grain mixture No. 2,	8¼ lbs., or 6 quarts.	Grain mixture No. 5,	9 lbs., or 9 quarts.

Grain mixtures Nos. 5 and 6 should only be fed with very coarse fodders, like straw, swale hay, corn fodder, etc.

G. H. WHITCHER, *Director*.

APPENDIX.

REPRINT FROM BULLETIN No. 4.

It is difficult for many to weigh hay, corn fodder, straw, etc., for lack of suitable scales, but this is by no means a serious matter; for less than one dollar outlay of cash and one half day's work a balance can be made that will weigh very accurately. The cuts on page 359 represent the parts of one that is now in use in our feeding barn. Figure 1 is the complete balance; A is the beam; a, a, a, are the pivots, which consist of screw eyes; b, b, b, are common halter snaps, which hook into these screw eyes. The cords which suspend the weight platform (W) and the spreader (h) pass through two of these snaps while the hook or cord by which the whole is suspended from a beam (d in the cut Figure 1) is attached to the third snap. The platform (P) is suspended by its four corners by cords passing through the spreader (h) at the parts marked 2, 3; the spreader being suspended by the cord shown passing through holes at 1 and 4. C is a plumb bob suspended from near the top of the beam at n, and when balanced should be in the centre of the board x that is fastened to the centre of the beam.

The material from which to construct such a balance consists of three screw eyes and three halter snaps; these may be had at any hardware store, also forty feet of window-weight cord and cloth or canvas to cover the hay platform; this is all that need be bought, and the whole cost is only 35 cents.

The beam is made of a straight piece of inch board, four inches wide and eight feet six inches long. This is shown in Figure 5. On the under side of this, at each end, a piece is cut out, six inches long and two inches wide, as shown; on the top side, in the exact centre, one screw eye is inserted; now measure exactly four feet each way from this to the points y, z (Figure 5), and insert a screw eye at each end on the under side, and this completes the beam.

Next get out two pieces, each one inch thick, and four inches wide, and five feet eight inches long, like Figure 4, and cut the ends as shown; these are the pieces o, o, which cross in Figure 2; cross them at right angles and nail securely; now take four laths (t, t, t, Figure 2), cut two of them four feet long, and two three feet nine inches long. The cross piece (o) which is underneath must have two blocks of inch board, four inches square, nailed to each end, to bring the top up even with the other cross piece. Now nail the laths on as shown. This is the skeleton of the platform, which is to be covered with heavy cotton cloth, or canvas, or oil cloth, tacked to the lath frame; $\frac{3}{8}$ inch holes are bored, one in each corner, and through this the window cord will pass. The spreader (h) is shown on a larger scale in Figure 6; it is made from a rake stake and is three and one half feet long; four holes are bored in this, two (1 and 4 in cut) are three inches from the ends, the spreader bail cord passes through these. The other two are nine inches from the end, and are at right angles to the two first mentioned; through these (2 and 3 in Figure 6) the cords which suspend the platform are to pass.

Figure 3 is simply a piece of inch board, one foot square, with holes in each corner. On this platform the weights are to be put. The cuts show how the cords are arranged; where the spreader bale passes through the halter snap it must be tied,

so that it cannot slip through the ring of the snap. It is very important that the distance between the centre screw eye and end ones shall be exactly alike.

When the hole is completed it may be suspended from a beam in the barn floor by a rope, and if it is desirable this rope may pass through a pulley on the beam, and when the balance is not in use it may be drawn up out of the way, being lowered onto the floor when needed.

I was three hours in building the one we are using, and most farmers, or their boys or hired men, can build one without having a carpenter to do the work. The cost will then be less than fifty cents. Surely this sum need not prevent any one knowing what he is feeding.

When the whole is complete two bricks will nearly balance the hay platform. It then becomes necessary to have weights from which various combinations may be made. Two bricks may be selected that will weigh four pounds each; another may be broken, thus getting, by a little chipping, a two pound weight; also a piece can, with a small amount of work, be made to weigh one pound. With these, even pounds from one to eleven can be made out.

I have just carefully tested the balance we are using and find it sensitive to one half ounce. The grain rations may be weighed on the same balance or they may be measured. The former is more accurate but not quite as convenient.

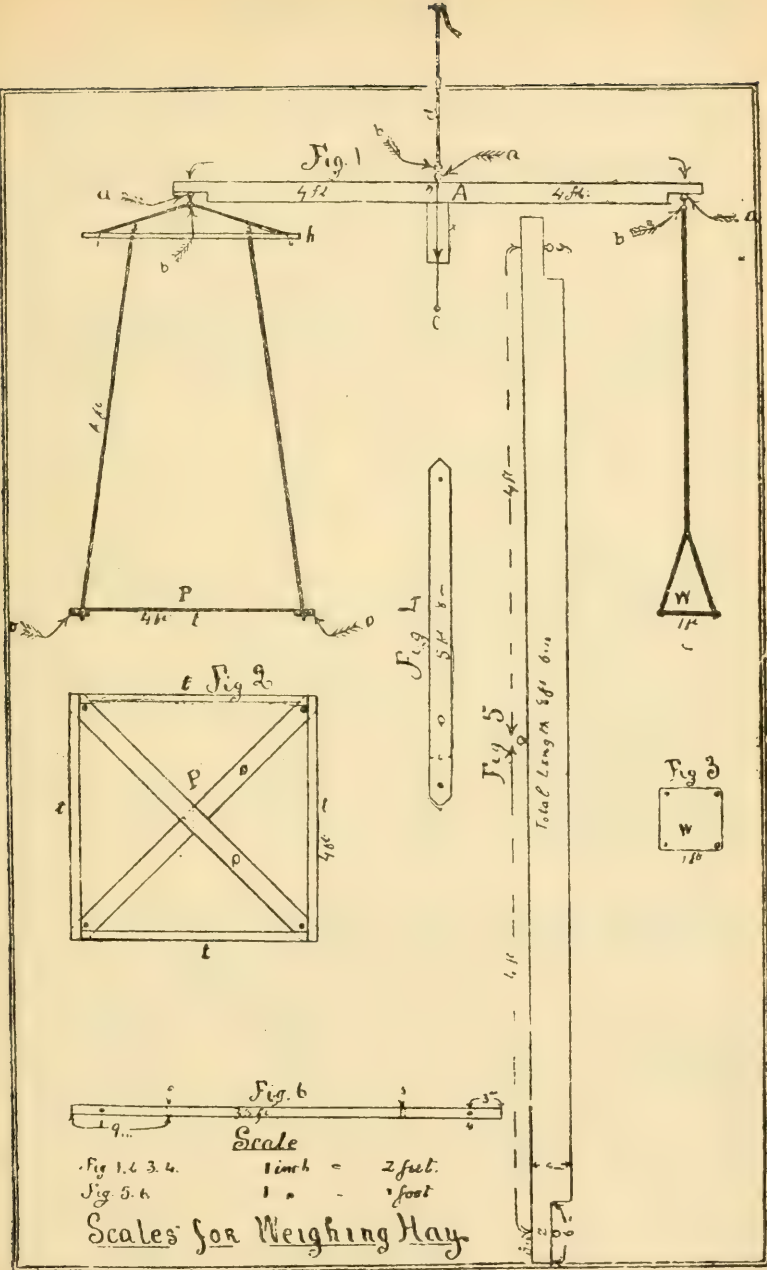


Fig. 1

Fig. 2

Fig. 3

Fig. 4

Fig. 5

Scale

Fig. 1, 2, 3, 4.

1 inch = 2 feet.

Fig. 5, 6.

1 " = 1 foot

Scales for Weighing Hay.

BULLETIN No. 18.

EXPERIMENTS IN FEEDING FOR MILK AND BUTTER.

A. H. WOOD.

During the winter of 1891 and 1892 experiments were carried on to determine the effect of some of the coarse fodders upon the quantity and quality of milk, and also upon the resulting butter product.

Ten cows were selected from the station herd and grouped as indicated in the following table. The table also shows the breed, length of time since calving, and approximate weight.

	Name.	Breed.	Last calf.	Weight.
Group 1.	{ Duchess.	Durham.	Nov. 9, '91.	1,100 pounds.
	{ Duchess, 2d.	Durham.	Dec. 22, '91.	1,000 "
Group 2.	{ Princess Leto.	Jersey.	Oct. 22, '91.	900 "
	{ Pilot's Lily.	Jersey.	Sept. 19, '91.	1,000 "
Group 3.	{ Frost.	Ayrshire.	Sept. 24, '91.	900 "
	{ Maramee.	Holstein.	Oct. 14, '91.	1,200 "
Group 4.	{ Chinchilla, Jr.	Ayrshire.	July 21, '91.	1,000 "
	{ Frost, Jr.	Ayrshire.	July 17, '91.	900 "
Group 5.	{ Maid of Arlis.	Ayrshire.	June 23, '91.	1,000 "
	{ Nora, 2d.	Durham.	June 21, '91.	1,200 "

During the first two weeks all of the cows were fed upon the following ration per 1,000 pounds live weight:

			—Digestible—	
			Albuminoids.	Non-albuminoids.
Ensilage	. . .	50 lbs., furnishing	.73 lbs.	7.40 lbs.
Mixed hay	. . .	5 “ “	.24 “	2.24 “
Oat hay	. . .	5 “ “	.18 “	2.38 “
Middlings	. . . 1 $\frac{2}{3}$	} 5 lbs.	“ .22	.96
Gluten	. . . 1 $\frac{2}{3}$		“ .56	1.03
Cotton-seed meal,	1 $\frac{2}{3}$		“ .52	.70
			<hr/> 2.45	<hr/> 14.71

This ration has a nutritive ratio of 1 to 6, or, to state the matter more fully, it furnishes one pound of digestible albuminoids to six pounds of digestible non-albuminoids.

Analyses of the milk of the different cows were made daily, and in the following tables the daily yield of milk and its per cent of fat are averaged for the entire period.

At the close of the preliminary period group 1 had clover hay substituted for mixed and oat hay, and in the fourth period they returned to the preliminary ration.

Table 1 shows how these changes affected the supply of albuminoids and non-albuminoids, and hence the nutritive ratio; also the average daily yield of milk, and its per cent of fat.

TABLE 1.

	Period.	Ensilage.	Mixed hay.	Oat hay.	Clover hay.	Mixed grain.	Albuminoids.	Non-albuminoids.	Nutritive ratio.	Average daily yield of milk.	Average per cent of fat.	Per cent of caseine.
		lbs.	lbs.	lbs.	lbs.	lbs.	lbs.	lbs.		lbs.		
Duchess.....	1	55	5½	5½	....	5½	2.61	16.17	1:6.0	34.00	3.91	2.90
	2	55	....	....	11	5½	3.05	15.88	1:5.2	35.10	3.94	3.00
	3	55	11	....	....	5½	2.63	16.33	1:6.2	32.99	4.03	3.00
	4	55	5½	5½	....	5½	2.69	16.17	1:6.0	30.17	4.12	3.41
Duchess, 2d.....	1	50	5	5	....	5	2.45	14.71	1:6.0	39.11	4.03	2.64
	2	50	....	....	10	5	2.78	14.45	1:5.2	36.44	3.91	2.67
	3	50	10	....	....	5	2.40	14.86	1:6.2	35.79	3.98	2.67
	4	50	5	5	....	5	2.45	14.71	1:6.0	35.05	3.66	2.81

Duchess, 2d, was slightly off feed during the last few days of period 1, and the first few days of period 2, which will explain the rather sharp decrease in her yield of milk.

Group 2 received vetch hay in period 2; in period 3, mixed hay replaced the vetch hay, and the quantity of both ensilage and dry fodder was reduced one fifth, corn meal taking its place. Table 2 shows the variations in the rations of group 2, and the results.

TABLE 2.

	Period.	Ensilage.	Mixed hay.	Oat hay.	Vetch hay.	Mixed grain.	Corn meal.	Albuminoids.	Non-albuminoids.	Nutritive ratio.	Average daily yield of milk.	Average per cent of fat.	Caseine per cent.
Princess Leto.....	1	lbs. 45	lbs. 4½	lbs. 4½	...	lbs. 4½	...	lbs. 2 21	lbs. 13 24	1:6 0	lbs. 23.18	5.23	3.45
	2	45	...	...	9	4½	...	2 66	12 47	1:4 7	22.76	5.32	4.16
	3	36	7½	...	...	4½	2¼	12 14	12 79	1:6 0	22.74	5.16	3.53
	4	45	4½	4½	...	4½	...	2 21	13 24	1:6 0	21.13	5.23	3.22
Pilot's Lily.....	1	50	5	5	...	5	...	2 45	14.71	1:6 0	19.73	5.19	3.65
	2	50	...	...	10	5	...	2 95	13 86	1:4 7	19.58	5.36	3.77
	3	40	8	...	...	5	2½	2 37	14.19	1:6 0	20.05	5.22	3.73
	4	50	5	5	...	5	...	2 45	14.71	1:6 0	18.75	5.29	3.69

The only trial of vetch hay was made with this group, and the result shows it to be equal to, or better than the mixture of hay and oats. Vetch hay is so rich in albuminoids that it might be combined with advantage with foods poorer in albuminoids than were used in this trial. Reference to the table will show that the substitution of it, in place of mixed hay and oat hay narrowed the nutritive ratio from 1:6 to 1:47, so that we cannot say that the result fairly exhibits its comparative value as a food.

In period 3 the substitution of corn meal for a part of the coarse fodder gave good results in that it not only held in check the natural decrease in yield of milk, but caused a slight increase. It would seem to indicate that when prices of grain and dairy products are in favorable relation, a heavier grain ration than that ordinarily fed by our farmers may be fed to good advantage.

Group 3 in period 2 received mixed hay. In period 3, corn meal was substituted for the gluten and cotton-seed meal, thus nearly approaching a ration fed by a great number of our New Hampshire farmers.

TABLE 3.

	Period.	Ensilage.	Mixed hay.	Oat hay.	Middlings.	Gluten.	Cotton-seed meal.	Corn meal.	Albuminoids.	Non-albuminoids.	Nutritive ratio.	Average daily yield of milk.	Average per cent of fat.	Casine per cent.
Frost.....	1	45	4 $\frac{1}{2}$	4 $\frac{1}{2}$	1 $\frac{1}{2}$	1 $\frac{1}{2}$	1 $\frac{1}{2}$	.....	2 21	13 24	1:6.0	30 50	3.95	.....
	2	45	9	.....	1 $\frac{1}{2}$	1 $\frac{1}{2}$	1 $\frac{1}{2}$	.....	2 15	13 36	1:6.2	31 52	3.87	.....
	3	45	9	.....	1 $\frac{1}{2}$	.....	.....	3	1 41	13 95	1:9.8	25 64	3.82	.....
	4	45	4 $\frac{1}{2}$	4 $\frac{1}{2}$	1 $\frac{1}{2}$	1 $\frac{1}{2}$	1 $\frac{1}{2}$	.....	2 21	13.24	1:6.0	24.42	3.84	.....
Maramee.....	1	60	6	6	2	2	2	.....	2 94	17 65	1:6.0	30 45	3.08	2.66
	2	60	9	.....	2	2	2	.....	2 87	17 82	1:6.2	31 31	3.08	2.84
	3	60	9	.....	2	.....	.....	4	1 89	18 61	1:9.8	28.32	3.04	2.63
	4	60	6	6	2	2	2	.....	2 94	17.65	1:6.0	26.39	3.08	2.58

A study of table 3 will show the reader how radical a change in the relation between albuminoids and non-albuminoids is brought about by so simple a change in foods as the substitution of corn meal for gluten and cotton-seed meal. The digestible albuminoids are reduced one third, while the digestible non-albuminoids are slightly increased and the nutritive ratio widened in consequence from 1:6.2 to 1:9.8. The effect of such a change in cows giving milk was shown in a sharp falling off in the yield of milk. To show how great this shrinkage was, we will make a comparison with the eight cows in groups 1, 2, 4, and 5:

Daily average yield of eight cows in groups 1, 2, 4, and 5 during period 2	25.71 lbs.
Daily average yield of eight cows in groups 1, 2, 4, and 5 during period 3	24.73 lbs.
Average shrinkage	.98 lbs.
Daily average yield of two cows in group 3 during period 3	31.41 lbs.
Daily average yield of two cows in group 3 during period 3	26.98 lbs.
Average shrinkage	4.43 lbs.

Or, stated in another way, the cows in the four groups fed upon normal rations during periods 2 and 3 gave three and eight tenths less milk per day during period 3 than during period 2, while the two cows in group 3 fed upon what ought to be considered an abnormal ration gave during period 3 fourteen and one tenth per cent less milk during period 3 than during period 2. If the two cows in group 3 had shrunk in the same proportion as the cows in the other four groups, their shrinkage would have been 1.19 pounds, leaving a shortage of 3.24 pounds, or a quart and a half of milk per cow directly chargeable to wrong feeding. We do not wish in this connection to be understood as condemning corn meal as a dairy food. It is a very valuable food when fed in connection with fodders rich in albuminoids as clover hay. Such grains as peas and oats or the highly nitrogenous by-fodders, cotton-seed, linseed, and gluten meals; but to make it the chief grain food with coarse fodders furnishing ample supplies of non-albuminoids but deficient in albuminoids, is simply inexcusable.

Coming now to group 4, we find the changes to have been to oat hay in period 2, in period 3 oat hay is replaced by clover hay, and in period 4 they returned to the original ration. Table 4 shows the results from these changes.

TABLE 4.

	Period.	Ensilage.	Mixed hay.	Oat hay.	Clover hay.	Mixed grains.	Albuminoids.	Non-albuminoids.	Nutritive ratio.	Average daily yield of milk.	Average per cent of fat.	Caseine per cent.
		lbs.	lbs.	lbs.	lbs.	lbs.	lbs.	lbs.		lbs.		
Chinchilla, Jr	1	50	5	.....	.....	5	2.45	14.71	1:6.0	17.80	4.32	3.17
	2	50	.....	10	.....	5	2.51	14.57	1:5.8	17.11	4.48	3.57
	3	50	.....	.....	10	5	2.78	14.45	1:5.2	17.17	4.37	3.70
	4	50	5	.....	.....	5	2.45	14.71	1:6.0	16.52	4.19	3.56
Frost, Jr	1	45	4½	.....	.....	4½	2.21	13.24	1:6.0	23.65	4.02	2.96
	2	45	.....	9	.....	4½	2.26	13.12	1:5.8	23.79	4.14	2.93
	3	45	.....	.....	9	4½	2.50	13.00	1:5.2	24.12	4.08	3.15
	4	45	4½	.....	.....	4½	2.21	13.24	1:6.0	21.53	3.78	3.04

Group 5 changed at the beginning of period 2 from the preliminary ration to one containing only one half as much ensilage, receiving in its place corn stover and corn and cob meal. The stover and meal fed were from corn exactly like that put in the silo, and as nearly as we could calculate the amount fed was equivalent to the reduction in ensilage. In period 3 the change from ensilage to dry stover and corn and cob meal was made complete. In period 4 ensilage replaced the stover and meal.

TABLE 5.

	Period.	Ensilage.		Mixed hay.		Oat hay.	Sanford corn stover.	Mixed grains.	Sanford corn and cob meal.	Albuminoids.	Non-albuminoids.	Nutritive ratio.	Average daily yield of milk.	Average per cent of fat.
		lbs.	lbs.	lbs.	lbs.	lbs.	lbs.	lbs.	lbs.	lbs.	lbs.		lbs.	
Maid of Arlis.....	1	50	5	5	...	5	...	1 ⁵ / ₈	2.45	14.71	1:6	22.98	4.07	
	2	25	5	5	4	5	...	5	2.45	14.71	1:6	22.30	4.11	
	3	...	5	5	8	5	...	3 ³ / ₄	2.45	14.71	1:6	18.36	4.34	
	4	50	5	5	...	5	...	5	2.45	14.71	1:6	16.69	4.11	
Nora, 2d	1	60	6	6	...	6	...	2	2.94	17.65	1:6	26.37	4.24	
	2	30	6	6	5	6	2	2	2.94	17.65	1:6	28.41	4.18	
	3	...	6	6	10	6	4	2	2.94	17.65	1:6	26.66	4.26	
	4	60	6	6	...	6	...	...	2.94	17.65	1:6	26.52	4.13

We have assumed that the digestible nutrients furnished in the rations fed during periods 2 and 3 were equal in amount to those fed during periods 1 and 4, but they may not have been so exactly. The reduction in the amount of ensilage fed in period 2 was accompanied with a slight shrinkage in milk in the case of Maid of Arlis, not, however, more than would have been expected if her ration had remained as before; while in the case of Nora, 2d, there was a positive increase of one quart per day. The effect of changing wholly to dry food in period 3 was a shrinkage in the yield of Maid of Arlis of nearly two quarts and in Nora, 2d, of nearly one quart per day. The return to ensilage in period 4 kept the yield of Nora, 2d, almost constant, while that of Maid of

Arlis continued to decrease, but not as rapidly as in the preceding period. We cannot draw any definite conclusions from these results, as there is uncertainty regarding the equivalence of the different rations; but they may serve to indicate that the most profitable use of ensilage may not consist in making it the almost exclusive coarse fodder in a milk ration.

We may now consider the relative effects of clover, vetch, oat, and mixed hays when fed in combination with such foods as were used in these experiments. The data are not very extensive, but we will present them at this time trusting that they will be of value to some of our farmers. Referring to the preceding tables, we gather the following results:

CLOVER.						Gain.	Loss.
						lbs.	lbs.
Duchess, period 2, mixed and oat hay to clover	.	.	.	.	.	1.10	
Duchess, 2d, " " " " "	.	.	.	.	.		2.65
Chinchilla, Jr., period 3, oat hay to clover	.	.	.	.	.	.06	
Frost, Jr., " " " " "	.	.	.	.	.	.33	
Duchess, period 3, clover to mixed hay	.	.	.	.	.		2.11
Duchess, 2d, " " " " "	.	.	.	.	.		.65
Chinchilla, Jr., period 4, clover to mixed and oat hay	.	.	.	.	.		.65
Frost, Jr., " " " " "	.	.	.	.	.		2.59

With one exception, changing to clover not only checked the natural decrease in milk yield, but gave a slight increase. In the exceptional case of Duchess, 2d, it is to be remembered that she went off feed just at the close of period 1, so that the shrinkage in her case cannot be charged up against clover. Again the changes from clover are in every case accompanied by a loss, in two instances, Duchess and Frost, Jr., surely beyond the natural decrease. We can safely say that clover certainly demonstrated its superiority over the other hays as a supplement to ensilage.

VETCH.

	Gain. lbs.	Loss. lbs.
Princess Leto, period 2, mixed and oat hay to vetches		.42
Pilot's Lily, " " " " "		.15
Princes Leto, period 3, vetch hay to mixed hay and corn meal . . . . .		.02
Pilot's Lily, period 3, vetch hay to mixed hay and corn meal . . . . .		.47

The vetch hay certainly proved itself to be a good food, yet there can be little doubt but that it would show to greater advantage in combination with foods of a wider nutritive ratio, since 1:4.7 is narrower than common experience has shown to be most profitable.

MIXED HAY.

	Gain. lbs.	Loss. lbs.
Duchess, period 3, clover to mixed hay		2.11
Duchess, 2d, " " " " . . . . .		.65
Frost, period 2, mixed and oat hay to mixed hay .	1.02	
Maramec, period 2, mixed and oat hay to mixed hay . . . . .		.86
Duchess, period 4, mixed hay to mixed and oat hay		2.82
Duchess, 2d, " " " " "		.74

Whenever there was a change from mixed and oat hay to the mixed hay alone, there was an increase in milk yield, and when the changes were from mixed hay to mixed and oat hay, so it would seem that the mixed hay (timothy and clover) gave better results than did oat hay, although in one instance (Frost, Jr., period 2) there was a gain from a change from mixed and oat hay to the oat hay alone.

OAT HAY.

	Gain. lbs.	Loss. lbs.
Chinchilla, Jr., period 2, mixed and oat hay to oat hay . . . . .		.69
Frost, Jr., period 2, mixed and oat hay to oat hay .	.14	
Chinchilla, Jr., period 3, oat hay to clover . . .	.06	
Frost, Jr., " " " " . . .	.33	

While oat hay gave rather less favorable results than did the other fodders, it nevertheless makes a fair showing.

CHANGES IN THE QUALITY OF MILK.

What was the effect of these various changes in the character of the food upon the quality of the milk? To the consideration of those who believe that the fat contents of milk can be materially varied by changes in the character of the food given cows, I would commend an inspection of the average percentages of fat as given in the preceding tables. That there are variations in the amount of fat in the milk when we compare period with period, is true, but it does not follow that these variations are due to the source of the cow's food.

It has been proven that a ration containing about two and one half pounds of digestible albuminoids and about thirteen and one half pounds of digestible non-albuminoids, is essential to maintain a cow, giving milk and weighing one thousand pounds, in a normal condition — that is, to keep her in good bodily condition and maintain a full flow of milk. Such a ration we may well call a normal or balanced ration. These figures are not arbitrary, within reasonable limits they may be varied without serious results, and perhaps sometimes with positive advantage. But suppose we give a ration containing only one and one half pounds of digestible albuminoids and a proper or greater amount of non-albuminoids. We are now giving the cow a ration that does not contain within it an amount of albuminoids sufficient to meet the demands of nature. She is certainly now in an unnatural or abnormal condition, and we

may properly speak of such rations as abnormal or unbalanced rations. May we not expect abnormal results from such feeding? We know that other abnormal conditions produce unnatural results.

I have frequently been asked the question, "If I feed a poorer ration, as straw without much grain, my cows will give milk poorer in fat, will they not?" I have answered that, in my opinion, it depended almost wholly upon the tendency of the cow, it would probably remain practically unchanged, but it might be either richer or poorer. My belief is simply this, that so long as a cow is fed upon a well balanced ration, composed of foods agreeable to her taste, the variations in the per cent of fat in her milk are mainly due to other circumstances than the sources from which the nutrients in her ration are derived.

Begin with table 1, and follow the changes through. With Duchess we find a small but nearly constant increase, while Duchess, 2d, shows a steady decrease. Duchess, 2d, was fresh in milk and, as before stated, was off feed early in the experiment. Princess Leto and Pilot's Lily made an increase in period 2, followed by a decrease in period 3, and an increase in period 4. Does the increase of one, or two tenths of one per cent, in period 2, and a decrease of one seventh of one per cent in period 3, prove, or even indicate that vetch hay has a tendency to cause cows to give richer milk, or that corn meal has a tendency to produce poorer milk? Is it not more probable that these slight changes were induced by the unusually narrow ration followed by the change to a heavy grain ration? Again, does the decrease in Frost and Maramée in period 3, of four or five hundredths of one per cent, prove that corn meal produces poor milk; or does it show that, in spite of the radical change in the food, these two cows continued to maintain the *quality* of their milk at the expense of *quantity*? To show the matter more plainly, I insert the daily record of Maramée for periods 2 and 3.

Daily record of Maramée, period 2. Nutritive ratio, 1:6.2.

1st week, yield of milk...	30.38	30.38	31.69	29.63	31.44	31.56	32.00	Av'ge, 31.01
2d week, yield of milk...	31.68	32.00	31.88	31.63	30.87	31.25	31.81	" 31.59
1st week, per cent of fat..	3.13	3.05	2.96	2.88	3.10	3.17	3.22	" 3.07
2d week, per cent of fat .	3.13	3.00	3.00	3.09	3.09	3.13	3.22	" 3.08

Daily record of Maramée, period 3. Nutritive ratio, 1:9.8.

1st week, yield of milk...	30.63	30.31	30.50	30.06	29.57	28.44	27.31	Av'ge, 29.46
2d week, yield of milk...	27.81	27.00	27.50	27.25	27.12	27.50	25.50	" 26.38
1st week, per cent of fat..	3.09	3.17	2.88	2.92	2.96	2.96	2.92	" 2.99
2d week, per cent of fat..	3.00	3.05	3.13	3.13	3.17	3.00	3.22	" 3.10

It is seen that in period 2, when the change was from mixed and oat hay to mixed hay alone, that there was a constant increase in milk, but no practical change in the fat contents. There are fluctuations from day to day, but these balance each other so nearly that the averages of the first and second weeks are nearly identical.

In period 3, with the substitution of corn meal for gluten and cotton-seed meal, the division of the period into weeks makes a different showing. We have first a falling off in quantity and quality of milk, followed by a still greater loss in quantity and increase in fat. If we compare the last weeks in the two periods, we see that the yield of milk shrank one sixth, while in richness it increased one one hundred and fiftieth; or the shrinkage was over sixteen per cent and the increase in fat less than one per cent.

These results are closely in accord with previous investigations at this station. See Bulletin No. 9, pages 12-14. In the experiments there recorded the substitution of corn meal for gluten gave a shrinkage of milk of 8.5 per cent, while the change in per cent of fat was .09 of one per cent.

EFFECT ON BUTTER PRODUCT.

At the close of each period, milk from groups 1, 2, and 4, and from Maramée of group 3, was separated with the De Laval Baby Hand Separator.

The cream was cooled to 45° F., and churned on the following day, while still sweet. Analyses of both the skim-

milk and buttermilk were made and samples of butter were reserved for future examination.

The comparative hardness of the butter was determined by Prof. C. L. Parsons, by means of the apparatus described in Bulletin No. 13—that is, by recording the depth of penetration of a glass rod dropped from a given height. The softer the butter, the further the rod will penetrate. The changes in food, such data as may be of general interest as to churnability, loss of fat in skim milk and buttermilk, and hardness of butter are given in the following table.

The character of the butter from the different groups was practically constant with the exception of hardness. In hardness there were several sharp variations. With Princess Leto and Pilot's Lily the change from a heavy grain ration resulted in a much softer butter. With Maramée the substitution of corn meal for gluten and cotton-seed meal resulted in decidedly hardening the butter. Corn meal usually produces butter of a firm texture, but cotton-seed meal has the same tendency in a greater degree and might have been expected to balance the softening influence of gluten. It would seem probable that the very wide nutritive ratio of the ration fed in period 3 should be credited with a part of this effect. With Chin-chilla, Jr., and Frost, Jr., the change to oat hay resulted in a very much softer butter. Although the butters from rations containing oat hay were generally softest, it is doubtful if the whole of the variation in this instance is traceable to it.

A study of the figures given in relation to the amount of fat lost per pound of butter recovered and the pounds of milk required per pound of butter, may be of interest. They are to a certain extent an illustration of the differences between the four breeds of cows. The approximate amount of butter from each cow can be easily calculated by reference to tables 1, 2, 3, and 4. The figures show what wide variations exist between different cows and herds.

	Period.	Ration. Ensilage, mixed grain, and —	Nutritive ratio.	Separating temper- ature, degree, F.	Speed of separator, revolutions per minute.	Churning tempera- ture, degree, F.	Time churning in minutes.	Per cent of fat in skim-milk.	Per cent of fat in buttermilk.	Fat lost per pound of butter recovered.	Milk required per pound of butter.	Hardness of butter, mm. of penetra- tion.
Duchess and Duchess, 2d.	1	Mixed and oat hay	1:6	82	6,100	48-54	15	.13	.48	.037	20 22	10 5
	2	Clover	1:5.2	83	6,500	48-54	35	.13	.52	.050	23 85	8 0
	3	Mixed hay	1:6.2	90	6,500	48-55	44	.20	.50	.061	23 91	6 0
	4	Mixed and oat hay	1:6	90	6,500	48-52	25	.08	.65	.043	23 92	9 0
Princess Leto and Pilot's Lily.	1	Mixed and oat hay	1:6	77	6,100	48-58	47	.22	.26	.036	17 75	5 0
	2	Vetch hay	1:4.7	88	6,500	52-57	35	.16	.20	.027	15 21	5 5
	3	Mixed hay and corn meal	1:6.2	90	6,500	52-58	60	.20	.23	.031	16 39	5 5
	4	Mixed and oat hay	1:6	90	6,500	52-54	49	.08	.40	.030	16 89	12 0
Maramee.	1	Mixed and oat hay	1:6	74	6,100	48-54	23	.35	.53	.115	32 05	17 0
	2	Mixed hay	1:6.2	90	6,500	48-53	30	.16	1.74	.102	30 75	18 5
	3	Corn meal in place of gluten and cot- ton-seed	1:9.8	90	6,500	48-54	68	.23	.40	.080	30 86	12 0
	4	Mixed and oat hay	1:6	92	6,500	48-56	87	.15	.45	.090	32 97	18 0
Chinchilla, Jr., and Frost, Jr.	1	Mixed and oat hay	1:6	76	6,100	48-56	27	.39	.41	.090	24 27	8 0
	2	Oat hay	1:5.8	88	6,500	48-54	25	.16	.52	.048	20 92	20 0
	3	Clover	1:5.2	90	6,500	48-56	45	.30	.60	.077	22 37	16 0
	4	Mixed and oat hay	1:6	92	6,500	48-56	77	.15	.65	.072	25 55	16 0

Determinations of the per cent of caseine in the milk of the cows in groups 1, 2, 4, and of Maramée of group 3, were made by Mr. E. P. Stone at the close of each period, a composite sample from the milk of the last five days in each period being used for the purpose. The results appear in the last columns of tables 1, 2, 3, and 4.

No variations that can be attributed to the character of food are found. A comparison of the different cows shows that the differences in the richness of their milk is rather more marked with reference to fat than to caseine. The following table shows the percentages of fat and caseine in the milk of the different cows during period 1, and it also shows the relative proportions of fat and caseine.

PER CENT OF FAT AND CASEINE IN PERIOD 1.

	Fat.	Caseine.	
Duchess	3.91	2.90	Ratio, 1 to .74
Duchess, 2d . . .	4.03	2.64	" 1 to .66
Princess Leto . .	5.23	3.45	" 1 to .66
Pilot's Lily . . .	5.19	3.65	" 1 to .69
Maramée	3.08	2.66	" 1 to .86
Chinchilla, Jr. . .	4.32	3.17	" 1 to .73
Frost, Jr.	4.02	2.96	" 1 to .74

It will be seen that low percentages of fat are accompanied with low percentages of caseine. Poor in fat means, then, poor in caseine, although in the poorest milk the amount of caseine more nearly equals the amount of fat than in the richest milk.

STATE OF NEW HAMPSHIRE.

BOARD OF CATTLE COMMISSIONERS.

OFFICE OF BOARD,

CONCORD, N. H., January 1, 1893.

To His Excellency the Governor, and the Honorable Council:

The Legislature of 1891 enacted a law creating a State Board of Cattle Commissioners "for the purpose of extirpating contagious and infectious diseases, especially tuberculosis among cattle," said law taking effect April 15, 1891. The Board organized by choosing Irving A. Watson, M. D., secretary State Board of Health, president; and N. J. Bachelder, secretary State Board of Agriculture, secretary. Work was at once entered upon and has been prosecuted with earnestness wherever there appeared to be need of action. As stated in the law, the suppression of tuberculosis among cattle was the object sought in its enactment, and in this direction the efforts of the Board have been mainly directed. It is only just to say that the action taken has been sustained by a strong public sentiment and the owners of cattle have generally been willing to coöperate with the Board for the extirmination of the disease.

The highest medical authorities recognize the danger to public health from contact with tuberculous animals and from the use of milk and meat of the same, and therefore the work

contemplated in the enactment of the law became of the highest importance to the citizens of the State, and of far more significance than that of protecting healthy animals from the disease.

For two years previous to the enactment of the law there had been occasional and spontaneous efforts made to eradicate the disease but there was such a lack of uniformity, so much unnecessary excitement in regard to the work attempted, and so many false reports in regard to the prevalence of the disease and the danger attending it, that the Board entered upon their duties with some hesitation and considerable doubt as to the measure of success that would attend their efforts. The importance of the work was fully realized by the Board and action under the provisions of the law was entered upon with a full determination to test its efficacy in bringing about the objects sought.

The first important action taken was the decision to recognize the authority of no veterinary surgeons except such as were duly qualified and held a diploma from some veterinary institution.

By duly adhering to this, the examinations have been made by qualified men and the number of errors in diagnosis have been surprisingly small as will be shown later in this report. All cases coming to the attention of the Board have been considered, and when the symptoms reported indicated the existence of tuberculosis an examination has been made. In cases where an animal has been killed by the owner and found to be infected, the balance of the herd has been examined. During the period from April 15, 1891, to January 1, 1892, one hundred and eleven condemned animals were killed, and of this number eighty-one were located in Hillsborough county. A circular letter was issued on the last mentioned date from which the following extract is taken :

“The extent to which the disease has been found in Hillsborough county caused the board to investigate the origin and history of certain cases, and in several instances it was traced directly to herds of cattle brought from Massachusetts, either for pasturage or to be sold, sometimes by unscrupulous dealers, to farmers and milkmen of our State. Cases outside Hillsborough county

have been traced to the same source. In 1887, when the existence of a case of pleuro-pneumonia was reported in Massachusetts, the State Board of Cattle Commissioners of New Hampshire issued quarantine orders against all cattle from the former State, and cattle were only admitted on permits issued by the Board, on presentation of satisfactory evidence by the owners that such cattle had not been exposed to pleuro-pneumonia. The wisdom of the Board in taking such action was unquestioned, and all possible danger to our live stock interests was averted. Reference to the records of that time show that of the 7,000 cattle admitted under those regulations, over fifty per cent came to Hillsborough county, and doubtless the same percentage of cattle annually brought into the State since 1887 has been landed in the same locality. In this county seventy per cent of the tuberculosis in the State has been found.

These facts have convinced the Board that if any permanent eradication of the disease is effected, regulations must be enforced against the introduction of tuberculous cattle from outside the State, and such action will doubtless be taken at an early day. The comparatively limited area of our State in which the disease exists has also convinced the Board that, with proper action, tuberculosis among our domestic animals, if not completely eradicated, may be greatly suppressed and the danger therefrom to public health reduced to a minimum."

In accordance with the foregoing suggestion the following order was issued January 11, 1892:

THE STATE OF NEW HAMPSHIRE.

OFFICE OF THE BOARD OF CATTLE COMMISSIONERS,

CONCORD, N. H., January 11, 1892.

To Boards of Selectmen :

You are hereby notified by the Board of Cattle Commissioners of the State of New Hampshire that a cattle quarantine against the State of Massachusetts is this day ordered. You are directed to seize and hold in quarantine all cattle not intended for immediate slaughter, coming into this State from Massachusetts after this date, and to notify this Board at once of such action.

Cattle from Massachusetts intended for immediate slaughter will be subject to quarantine regulations if any contagious or infectious disease is found among them; otherwise they will be allowed to proceed to their destination. All other cattle brought into the State without a permit from this Board must be held by you, as above directed, until this order is cancelled.

Any violation of this order coming to our knowledge will be prosecuted in accordance with the provisions of the General Laws of New Hampshire.

IRVING A. WATSON,
N. J. BACHELDER,
Cattle Commissioners.

On the same date the following explanatory letter was sent :

THE STATE OF NEW HAMPSHIRE.

OFFICE OF THE BOARD OF CATTLE COMMISSIONERS.

CONCORD, January 11, 1892.

To Boards of Selectmen :

The cattle quarantine this day ordered by the Board of Cattle Commissioners of New Hampshire, we believe to be necessary and in the interest of public health as well as for the protection of the farmers, dairymen, and stock raisers of the State. Accompanying this will be found a copy of the report of this Board recently made to the governor and council, in which is stated the extent and location of the disease as found by the Board, and the necessity of issuing this quarantine order. The cattle commissioners of Maine have already taken similar action.

The great difficulty which attends the stamping out of the infection of tuberculosis makes it the duty of all to use every endeavor for its suppression. A permit to bring cattle into New Hampshire may be obtained by furnishing to this Board satisfactory evidence of non-infection. Application must be made upon blanks which will be provided by this Board.

IRVING A. WATSON,
N. J. BACHELDER,
Cattle Commissioners.

Under date of January 19, 1892, the following order was issued to transportation companies :

THE STATE OF NEW HAMPSHIRE.

OFFICE OF THE BOARD OF CATTLE COMMISSIONERS.

CONCORD, January 19, 1892.

To Transportation Companies :

By virtue of the authority vested in this Board, you are hereby directed not to bring into and leave or allow to be unloaded within the State of New Hampshire, after this date, any cattle from the State of Massachusetts not designed for immediate slaughter, unless they are accompanied by a permit from this Board, until this order is revoked. Cattle from the State of Massachusetts designed for immediate slaughter will be subject to quarantine regulations if any contagious or infectious disease is found among them; otherwise they will be allowed to proceed to their destination.

Station agents must notify the town authorities and also this Board immediately upon the arrival of any such cattle at their stations.

This order is issued for the purpose of preventing the introduction of diseased animals into the State, and all violations will be dealt with according to the provisions of the Public Statutes.

IRVING A. WATSON,
N. J. BACHELDER,
Cattle Commissioners.

On January 20, 1892, Mr. W. F. Berry, general freight agent of the Boston & Maine Railroad, issued circular No. A, 161, and Mr. D. C. Prescott, general freight agent of the Concord & Montreal Railroad, issued circular No. 126, to station agents on the respective lines, ordering that they be governed by the order issued by the New Hampshire State Board of Cattle Commissioners.

On March 24, 1892, the following circular letter was issued :

STATE OF NEW HAMPSHIRE.

BOARD OF CATTLE COMMISSIONERS,

CONCORD, March 24, 1892.

To Boards of Selectmen and others :

Many inquiries have been received at this office in regard to the necessary steps to be taken in bringing cattle from Massachusetts into New Hampshire, and for the information of all interested this circular is issued. The reason for issuing the quarantine order against cattle from the former State was fully explained in the circular letter of this Board accompanying the order referred to. The requirements for bringing sound cattle into the State from Massachusetts are as simple as could be devised with safety, and briefly stated are as follows :

Application for a permit must be made to this Board on blanks furnished by us, a copy of which is herewith enclosed. By reference to this blank you will notice that following the application is a blank for a certificate from a qualified veterinary surgeon who has examined the cattle to be brought in, stating that he finds them free from tuberculosis or other contagious diseases. The certificate following this is to be signed by the person who makes the application. Immediately on receipt of the application, properly filled out, a permit, covering the number of cattle stated in the application, will be forwarded. Thus it will be seen that the only expense or inconvenience to the owner or driver of cattle will be the employment of a veterinary surgeon to examine the cattle when collected and ready to ship, and a possible delay of one day for sending the application and returning the permit.

This need prevent no one from bringing cattle for pasturage or other purposes, providing said cattle are free from disease. The order, as far as we

have been able to learn, is universally approved by the people of the State, and we trust that no one will consider the requirements imposed expensive or arbitrary in so important a matter as the protection of our live stock interests and public health from the ravages of tuberculosis and other contagious diseases.

For the Board,

N. J. BACHELDER,
Secretary.

From January 1, 1892, to January 1, 1893, two hundred and one permits have been issued by this Board, covering five thousand three hundred and thirty-nine head of cattle which have been brought into the State from Massachusetts. Cattle dealers, dairymen, railroad officials, and all others affected by the foregoing regulations, have recognized the necessity of the same and manifested a universal disposition to coöperate with the Board in all just means of suppressing the disease. In the opinion of the Board, the spread of the disease has been very materially restricted by the strict orders enforced against the introduction of diseased cattle from outside the State.

The following statement, by counties, of the herds inspected and number of cases found, will be of interest, and indicates that the disease is practically limited to certain sections of the State. There is also encouragement in the fact that during the first eight and one half months one hundred and eleven cases were found, while during the past twelve months, with the same effort, but eighty-five cases have been discovered. This is a reduction in number of cases of about fifty per cent, and leads the Board to conclude that more has been accomplished in eradicating the disease than was thought to be possible at the commencement of the work :

	Rockingham.	Strafford.	Belnap.	Carroll.	Merrimack.	Hillsborough.	Cheshire.	Grafton.	Sullivan.	Cochs.	Total.
Total number of herds inspected	31	13	10	....	82	172	11	1	4	....	324
Total number of cattle condemned and killed.....	16	11	4	....	42	117	6	....	....	....	196
Total number of post-mortem examinations.....	16	11	4	....	42	117	6	1	3	....	196
Total number found diseased on post-mortem examination....	16	11	4	....	42	115	6	1	3	....	194
Total number condemned and killed from April 15, 1891, to January 1, 1892.....	7	8	3	....	12	81	....	....	....	....	111
Total number condemned and killed from January 1, 1892, to January 1, 1893.....	9	3	1	....	30	36	2	....	....	....	85

While the nature of tuberculosis and its communicability from persons to animals as well as from animals to persons renders its complete eradication impossible, yet the Board are of the opinion that the action taken by the State in this matter was wise and of the highest importance, and the experience of the past demonstrates beyond all reasonable doubt that vigorous action will still further suppress the disease and reduce the danger therefrom to the minimum. In order to accomplish this there must be a spirit of coöperation manifested on the part of stock owners and a disposition to have all infected animals destroyed rather than sold to some unsuspecting purchaser. To accomplish this, some remuneration must be made to the owner beyond the mere value of a condemned animal which is hardly a sufficient sum to be called an appraisal. Beyond securing just property rights there should be sufficient financial inducement to cause the owner not to secrete the disease from pecuniary motives. The law enacted by the Legislature of 1891 provided for the appraisal of all animals condemned by the cattle commissioners at their value in healthy condition and the owner received one half of said appraisal of the State. This law was a just one and satisfactory to all concerned without imposing any unjust burden upon the State. The report of the commission on revision

of laws as embodied in the Public Statutes took effect January 1, 1892, and under these the owner of animals destroyed by order of the cattle commissioner recovers only the appraised value of such animals in a diseased condition which as we have previously stated is a sum so small as to hardly constitute an appraisal and causes great difficulty and dissatisfaction in carrying out the object contemplated in the enactment of the original law. In view of these facts the Board recommends that the present law be amended so as to provide for an appraisal in accordance with the suggestion herein contained and in accordance with the law as enacted by the preceding Legislature.

Respectfully submitted,

IRVING A. WATSON,

N. J. BACHELDER,

Cattle Commissioners.

TUBERCULOSIS IN ANIMALS.*

BY JAMES LAW, F. R. C. V. S., ITHACA, N. Y.

The subject of tuberculosis has in past times given rise to many fallacious speculations and rather blind precautionary measures. Prevailing, as it did, so widely among men and animals, it naturally engaged to a large extent the attention of physicians and of the public at large.

In the earliest ages there seemed to be a vague general dread of disease, — thus the Jewish law prohibited the people from eating carnivorous and omnivorous animals which were likely to derive disease from others directly through their food, the animal that died of itself, and that which showed clear evidence of disease when slaughtered. To the present day the Rabbi carefully inspects the internal organs, and if he detects any manifest disease he marks the carcass *traver*, which may be sold to the Gentiles, while the sound or *kosher* meat is alone disposed of to the faithful. He gives, however, special attention to the chest, the common seat of tuberculosis. He even goes the length of inflating the lungs, and if at any point there is a breach, so that bubbles of air escape, the carcass is branded *traver*.

So among many primitive peoples the man who touched a dead body became ceremonially unclean, and in Ancient Greece the priests of Jupiter might not pollute themselves by even touching meat until it had been cooked.

In the middle ages tuberculosis was generally recognized as a communicable disease, being confounded with syphilis in

* Paper presented at the public winter meeting of the State Board of Agriculture at Peterborough, December 29, 1892, by Prof. James Law, of Cornell University, Ithaca, N. Y.

man, and in Germany and Italy laws were passed interdicting the use of the flesh of tuberculous animals under severe penalties.

Later Lorin and Dupuy confounded the disease with glanders, mainly on account of the similarity of the rounded diseased masses in the two maladies.

Later and more scientific observation showed the lack of identity of these three diseases which so resembled each other in the slow and insidious nature of their progress, and in the naked eye appearances of their specific products, and physicians gradually came to accept the opinion that tuberculosis was a disease inherent in certain constitutions and families, and developed in such under any disturbing influence. The conviction of its transmissibility lingered, however, among the common people, and in the south of Europe, to which the consumptives flocked for relief under a more genial climate, the disease became so prevalent, even among the natives, that no one ventured to dispute its communication by contagion. Hence, before the crucial experiments of Villemin in 1865, which demonstrated the inoculability of tuberculosis, the furniture of any room in which a consumptive person had died, in any Italian city, was burned up, and the friends or estate of the deceased were drawn upon to pay the bill. Illogically enough, there was no such destructive disinfection enforced in case of a room in which a consumptive person had lived, provided he left it before death ensued. The householder was always pleased to admit another invalid and to give him the full benefit of the infection left by the previous occupant, who had gone off to occupy and contaminate another apartment somewhere else. These one-sided and inadequate precautions have resulted in leaving Italy the most consumption-ravaged country of Europe. Her balmy air drew the sufferers from every source, and the effect of the salubrious climate has been far more than counterbalanced by the concentration of the poison, which has passed from man to man, and from man to beast, until Perroncito declares that among the herds of the peninsula it has become a veritable plague.

The observation of the disease in animals served to keep alive the belief in contagion. Thus Dr. Rühling, of Gœttingen says in 1774, "the malady is transmitted to other animals previously sound through their licking each other and inhaling each other's breath while standing side by side in the stall, also by frequenting the same pastures." Again, in Krünitz's *Encyclopædia*, published in Berlin (1787), it is alleged "that the malady is contagious, and conveyed from animal to animal by contact." Thus the belief in contagion persisted among veterinarians, as we see in the writings of Fromage, Hazard, Spinola, Lafosse, Dupont, Cruzel, and Zannger. It was only known in 1865, when Villemin published his successful inoculations of rabbits and guinea-pigs, that the attention of physicians was again drawn to the subject, and on the part of English and American physicians especially it was with a feeling of decided unbelief and opposition that they set about putting the Frenchman's conclusions to the test.

ESSENTIAL CAUSE. — BACILLUS TUBERCULOSIS.

But the stern logic of facts slowly convinced all candid observers of the reality of the contagion, and when, in 1882, Robert Koch demonstrated the existence of the tubercle bacillus, and showed that the disease could be produced with equal facility by inoculating with the material of a tubercle from an ox's lung, or with the isolated bacillus from a colony grown on a gelatine preparation, the last shade of opposition gave way, and the medical world came round to the opinion that consumption was infectious.

To-day there is the universal concurrence of intelligent men that tuberculosis is a germ disease which can no more appear in any animal or organ without the planting of the bacillus than can wheat grow up in a soil in which its seed has not been planted. Usually its development is slow, and it is often difficult or impossible to trace every case back to its true source; yet the incontrovertible fact that the one essential cause of the disease is the presence of the bacillus is a

sufficient answer to any claim of the development of the malady from unwholesome conditions of life in the absence of the germ.

The germ is a minute rod so small that 2,500 of them placed end to end would barely extend an inch. They increase by growing out lengthwise and dividing in two, and by a continuation of this process they form clusters or colonies in the tissues where they are planted, cause inflammation in the part, and finally in many cases the death of the round nodular product, and its degeneration into a cheesy, yellowish white mass. The mere presence of a bacillus, however, is not sufficient evidence of tuberculosis, not even if that bacillus has been found in a cheesy mass. In glanders, which attacks all farm animals but cattle, there is a similar degenerated cheesy rounded mass, or nodule, containing a similar bacillus or rod a little shorter and thicker than the tubercle bacillus, but not sufficiently so to be distinctive, considering the fact that each multiplies by growing in length and dividing across. The distinction between the tubercle bacillus and others found in similar circumstances is based on the difficulty with which it absorbs coloring matter, and with which it may be again bleached from such colors. The other bacilli stain more quickly and deeply in pigment solutions, but they part with the stain with equal rapidity, and thus after prolonged staining and moderate bleaching such bacilli are rendered colorless and practically invisible under the microscope, while the bacillus tuberculosis stands out deeply stained.

The presence in a nodular swelling in the tissues, whether that nodule is soft and red, firm, white, and fibrous, or soft and cheesy, the presence in such of a rod-shaped body shorter than the breadth of a red blood globule, staining slowly in solutions of pigment, and retaining the color obstinately when subsequently placed in a bleaching solution, is substantial evidence of the existence of tuberculosis.

ACCESSORY CAUSES.

No one to-day presumes to question the claim of Koch that "We can with good reason say that the tubercle bacillus is not simply one cause of tuberculosis, but its sole cause, and that without tubercle bacilli you would have no tuberculosis." But it by no means follows that all previous investigations as to the supposed causes of tuberculosis are thereby rendered of no account. Far from it. The seed is a prime essential, without which there can be no crop, but you must have in addition a suitable soil and favorable surroundings in order that any seed may grow and prosper. Wheat will not grow on the bare rock, nor will it mature in the salty sand of the seashore. So with the bacillus tuberculosis; it must have a favorable soil and climate in order to luxuriant growth. I may name some of the accessory conditions.

I. — HEREDITARY PREDISPOSITION.

It has long been noticed that consumption runs in families, and hence it was looked upon as essentially a hereditary disease, and every precaution was taken to prevent the development of the disease in those who had received the fatal bequest. We now know that the disease itself is very rarely hereditary. From the bodies of thousands of tuberculous cows killed in the abattoirs of Europe, the number of tuberculous offspring taken may be counted on the fingers of the two hands. Sumner records five instances, and Johne and others three more. Landouzy and Martin produced tuberculosis in a guinea-pig by inoculating it with the juices of an apparently sound fœtus of a tuberculous woman. Krabasoff inoculated a pregnant guinea-pig and found the germs in the offspring.

Such meagre gleanings of congenital cases as compared with the notorious prevalence of tuberculosis in certain families suggests the conclusion that the proclivity to the affection in such cases is not an indication of inherited disease, but rather of a susceptibility to contract the disease. This conclusion is further strengthened by the facts that, even in milk calves the cases are very rare — under one per cent where the adult cattle

are six per cent, — and that in such cases the disease in a large proportion of cases attacks the bowels, intimating that the infection has entered the system in the milk. Not a few of the obstinate and fatal bowel disorders of sucking children and calves are in reality tuberculosis of the bowels induced by the milk.

This family susceptibility is often so strong that it is no wonder that our fathers looked upon it as the sole or main cause of the disease. I shall quote but one case in cattle in point. In 1877 I recognized the existence of tuberculosis in the Jersey herd of Burden Bros., of Troy, N. Y. The worst were slaughtered, but some incipient cases in young animals were turned out in a pasture by themselves, where they passed the summer in apparently robust health, but they began to droop when returned to the barns in the fall. I again visited the herd, and picked out eleven diseased animals, and had them killed, when Mr. James Burden informed me that I had destroyed every representative of a certain family, not even a grade having been left. From that day on there was no more trouble with tuberculosis in that Jersey herd.

Is it possible to offer a stronger argument for the restriction of our breeding herds to families that have shown themselves to be specially insusceptible to this disease?

2. — CLOSE BUILDINGS.

Thirty years ago Dr. Macormac wrote a large book to prove that tuberculosis is the result of imperfect ventilation and of breathing the same air over and over. We now know that by itself, and in the absence of the germ, this could never have produced tuberculosis, but none the less the book is pregnant with truths of the greatest value to every householder and every stock owner. The case of the Burden Jerseys already referred to is one in point. Though the disease was already recognizable in the spring, the subjects showed an appearance of blooming health all through the summer pasturage, but when returned to the close barns they fell off so that very soon they had to be helped up in the stalls.

The contrast between the cattle of the prairies and plains and the cows pent up in our city dairies is no less striking. In 2,273,547 fat cattle inspected by the Bureau of Animal Industry only 492, or .02 per cent were found tuberculous. Out of 54,158 cows, 669 or 1.23 per cent were tuberculous. For every tuberculous ox from cattle raised in the open air there were sixty tuberculous cows kept in the barns of the cities and country. This, however, does not tell the whole truth. In shipping cattle a long distance from the plains to Omaha or Chicago a selection is first made; the fat and the healthy are disposed of, while the unthrifty, which would not pay for carriage and would spoil the sale of the others if sent, are kept at home. On the other hand, the dairy cattle of our large Eastern cities, from New York to Baltimore, and of Chicago have been recently killed out in rooting out lung plague, and their places have been filled with fresh healthy cows from the country. A fairer estimate may be obtained from some of the cities of the Old World. Thus in Copenhagen the proportion tuberculous in the cows slaughtered was 16 per cent (Bang), in Holland it rose in some localities to 19 per cent, and in some places in England to 26 per cent (Cope). In Delaware county, N. Y., I have examined hundreds of cattle without detecting a single case of tuberculosis, while in some suburban herds I have found as many as 50 per cent tuberculous. In one high-class herd 40 tuberculous have been killed during the past two years, and of the 20 remaining half are under grave suspicion. In another Devon herd I found 59 out of the 60 cattle manifestly tuberculous. All this goes to show that, in an open air life, or in the absence of the germ, tuberculosis may be entirely absent, whilst that in presence of the germ, the close crowding of animals in a poorly ventilated building contributes largely to its spread.

Mr. Even records that in Buenos Ayres the native stock suffer to the extent of half of 1 per cent, whilst newly imported stock to the extent of 10 or 15 per cent. Here the confinement and breathing of impure air on shipboard is fairly chargeable with the increased prevalence. This speaks in the

strongest terms for an open air life, and for cattle raising in a climate such as the Southern States and Pacific Coast, in which stock can be constantly out of doors.

In our Northern States, and especially for dairy cows, good shelter is essential, and here, accordingly, our attention must be given to secure perfect cleanliness and good ventilation, but, above all else, the exclusion of the germ. The rebreathed air lays the system open to the attack, but that attack will never come if the bacillus is absent. A number of years ago I found 50 per cent of the dairy herd of a large state institution in New York affected with tuberculosis, and, among other things, I advised the disuse of a close, ill-ventilated brick barn. The cattle were destroyed, and the barn thoroughly disinfected, and though again filled with cattle, there has been no further trouble.

DARK STABLES.

Like rebreathed air, darkness predisposes strongly to the disease. Indeed, it acts to some extent in the same way. Like the colors of plants, the colored elements of the blood — the red blood globules — are developed under the action of light, and in darkness the red globules become deficient. But these red globules are the carriers of the oxygen from the lungs to all parts of the body, and if there are too few globules available, less oxygen reaches the different tissues, and they suffer exactly as they would if the air had already been breathed and robbed of its due proportion of oxygen.

INSUFFICIENT FOOD.

Whatever weakens the constitution diminishes its power of resistance to this as to most other germs, and poor and insufficient food holds a high place in thus predisposing to tuberculosis. At the same time the fattest animal is not, therefore, proof against tuberculosis. Hence scrofula has been the scourge of the poor, as tuberculosis has been of dairy herds. In the latter the demand for the nourishment of the calf, and the feeding adopted to stimulate the milk, together

with the urging of the udder by clean, careful milking, strain the digesting and assimilating powers to the utmost, and in the presence of the bacillus many fall under its sway.

INBREEDING.

Persistent close breeding is undoubtedly a common factor in developing that predisposition to tuberculosis, mainly, no doubt, by reason of its intensifying the already existing family character of susceptibility, just as it intensifies and fixes other family traits, good and bad. There is every reason to believe, however, that, in addition to this, it begets a certain weakness of constitution comparable to the increasing lack of fertility among themselves, which appears in a family that has been too closely bred for a series of successive generations.

BREEDING TOO YOUNG.

Breeding of immature animals is a strongly predisposing cause, as the demands upon the system for the nourishment of the offspring and at the same time for the dairy products interferes with the full development of the dam, rendering it weak and susceptible.

ILL-HEALTH.

The whole list of acute and still more of chronic diseases may be adduced as predisposing causes of tuberculosis, as they, one and all, leave the system weakened and susceptible.

On the contrary, in weak subjects exposed to tuberculosis among the best preventives are tonic remedies, like a bracing out-door life, a well developed muscular system, plenty of sunlight and preparation of iron, strontia, and cod liver oil. Among foods, such oleaginous agents as linseed, or rapeseed, or cotton seed would be especially commendable.

But some diseases are particularly strong in their predisposing influence. Diseases of the air passages and lungs are especially so by reason of their weakening the parts upon which the germs fall, and preparing a receptive field for their growth. The inhalation of dust and smoke are especially to

be feared, because they irritate, and produce a raw surface unusually favorable to the reception and growth of the bacillus.

On the part of the stomach, disorder of any kind paves the way for the successful passage of the bacillus through the gauntlet of the organ, and for its arrival in full vigor in the more favorable intestine. The bacillus tuberculosis lives in an alkaline or neutral material, and anything sour or acid is hurtful or fatal to it. In the acid secretion of the healthy stomach, therefore, it runs great risk of destruction, but under an attack of dyspepsia, when that secretion is suspended, or when all the food is not thoroughly digested, it may safely escape this danger and become fatally implanted on the alkaline bowel.

Then, again, nothing will more certainly undermine the vital powers than a confirmed dyspepsia, as without the digestion of the food there can be no absorption nor assimilation of the nutritive principles. Disorders of stomach and bowels are, therefore, among the most fruitful factors in bringing about tuberculosis, and in man especially the onset of the disease is often preceded by a persistent indigestion.

ANIMALS SUSCEPTIBLE TO TUBERCULOSIS.

Few, if any, diseases can boast a sway over a wider range of animals than tuberculosis. Among the domesticated animals cattle are perhaps most susceptible, but chickens, guinea-pigs, rabbits, swine, and goats follow closely on their heels. Some have thought that dogs, cats, sheep, and horses are exempt, but all contract the disease when inoculated with fresh tuberculous material. Their partial escape is, therefore, probably due in part to the greater amount of out-door life which they enjoy, and, in the case of horses and dogs, to the greater amount of exercise enjoyed, to the better condition of the muscular system, and to the greater constitutional vigor. Yet, after making all due allowance for these and other causes of exemption, it must be allowed that these four animals enjoy a native intolerance of the affection, to which the first named animals are strangers.

Among the less domesticated animals that contract tuberculosis may be named caged apes, lions, kangaroos, deer, elk, gazelle, antelope, and, in addition, the rats, mice, and other vermin of our houses and barns. All must, therefore, be considered as possible bearers and disseminators of the infection, and none must be ignored in any systematic attempt to *stamp out* the disease. Some, however, are justly considered to contribute more than others to the maintenance of the affliction, and in this connection, in addition to man himself, we must especially name cattle, fowls, and pigs.

INDESTRUCTIBILITY OF THE BACILLUS TUBERCULOSIS.

Before referring to the rôle fulfilled by these different subjects in the propagation of tuberculosis, it seems desirable to learn something of the conditions which tend to destroy the vitality of the tubercle bacillus and those under which its survival may be expected.

DRYING AND HEATING.

Though the infecting material be *dried up* and reduced to powder, the germ is not destroyed, provided that too high a temperature has not been used in the drying. As this subject of destructibility by heat is a very far reaching one, I may be pardoned for dwelling on it a little more at length. Chauveau and Arloing found it infecting after having been heated to 158° F. for half an hour. Toussaint found that broiled steak, the interior of which had reached 163° to 176° F., was still infecting. Martin heated tuberculous matter in sealed tubes to 212°, but found that even then some germs would exceptionally escape. Chauveau and Arloing found that nothing survived half an hour of the boiling temperature, and Galtier found that 162° F. kept up for a length of time sterilized. This last temperature coagulates white of egg and other albumens, and, if continued so as to change the contents of the germ, it appears to sterilize it. Below this temperature, however, the blood in the interior of meat is not coagulated and discolored, but oozes out as a red fluid, and the germ survives. So much for eating the *rare* steaks of a tuberculous animal.

Now, this temperature which will coagulate albumen is not reached when tuberculous matters dry spontaneously in the open air. The dried up expectorations, therefore, are still infecting, and, as reduced to powder and blown about by the winds, these become prolific sources of infection. In barn yards, stock yards, and railroad cars this operates; and for man, in rooms, stores, and streets the same distribution of the poison takes place. It is now allowed that the handkerchief is one of the most prolific sources of infection. The expectoration dried up on the cloth is reduced to powder, and later shaken out on the air to be breathed by someone else. In the case of cattle the manger smeared with the discharge of the diseased animal dries up, and retains the virus in full strength for a subsequent occupant of the stall. We constantly see tuberculosis attack in succession the animals placed in the same stall, and those standing next the diseased one and privileged to eat out of the same manger. As the milder cases usually pass without recognition, it would be an admirable precaution to divide each stall from the next by a close partition at the front so that the cattle could neither lick each other nor a common manger. Then when a diseased animal is removed, the manger should either be destroyed and replaced by a new one, or thoroughly disinfected by a strong solution of chloride of lime. Another important precaution is that each animal should be trained to take its own particular stall, and not be allowed to go into any stall at random. This matter of the stall and manger is all important, as far more cases arise from this mode of infection than from breathing the same air or inhaling infected dust.

For the same reason persons affected with tuberculosis should not be allowed to attend in the stables, nor to expectorate on the floors nor the fodder of the animals. For man, sanitarians justly advise that all expectoration should be made into cuspidors containing water, to be disinfected and cleansed at frequent intervals, or into tissue paper, to be carefully burned as soon as possible.

By preventing the drying of the virulent discharges the

great danger of their diffusion on the air is overcome, but it does not by any means follow that when wet the material is harmless.

SURVIVAL IN WATER AND MOIST EARTH.

Galtier and others found that the infection was preserved indefinitely in springs, ponds, and wells of all ordinary temperatures. Hence the danger of common drinking troughs, of streams that have run past infected herds, or the place where their manure has been put, and of the soils that have received the manure and carcasses of the diseased. Galtier failed to produce tuberculosis with vegetables grown on soils that had been manured with infecting material, but it is manifest that the survival of the germ in water implies its survival in the moist soil, and that the earth of such soil which clings to turnips, beets, potatoes, and other roots and tubers is not altogether free from danger. This is a slight danger, it is true, but it suggests the destruction of infected manure by burning or disinfectants, and of the carcasses by burning or boiling rather than by simple burial. If buried it should be where no root crops are to be grown for a year or two thereafter.

Freezing does not destroy the virus. Galtier kept tuberculous matter for two months in water at 39° to 50° F., and for four days at 27° F., and found it still infecting. In another case he kept such matter for two months at a temperature at all times under 54° F., and for five days at 16° F., yet it proved virulent. Neither the winter's frost, therefore, nor the common alternations of temperatures in the soil can be trusted to disinfect it, in a short time.

Putrefaction does not destroy the virulence of tuberculous matter. Cornil and Babes left such matter to putrify, and then dried it up, but found it still infecting. Mallassez and Vignal first dried such matters, then softened them in water and left them to putrify, but found them still virulent. Galtier kept such matters moist and putrid at a temperature varying from 38° to 48° F. for seventeen days, but found them still infecting.

Heavy salting in the case of meats appears fatal to the germ, but requires at least one month to make it effective. Galtier found that the virulence was unaffected after eight days in salt. After fifteen days it was found to be harmless to rabbits but still fatal to the more susceptible guinea-pig. After thirty days it was alike harmless to both. While allowing, then, that salt may destroy the tubercle bacillus, we must yet recognize that even in a concentrated form it acts with great tardiness, and considering the unequal state of saturation in different parts of a large mass of meat it would be foolhardy to trust to its efficiency as a general precautionary measure. This caution is reinforced by the fact that Galtier found that salted pressed cheese was still infecting after the lapse of eleven months.

All this goes to show that the tubercle bacillus, which absorbs so very slowly any coloring matter, is equally tardy in taking in other materials that may be unfavorable to it, and that it may thus easily survive many conditions which prove destructive to most other bacteria. Hence the necessity of adopting special precautions against its preservation, and transmission through the meat products and excretions of tuberculous animals.

FOOD PRODUCTS OF TUBERCULOUS ANIMALS.

I have already stated that tuberculous matter is liable to infect the bowels, abdominal lymphatic glands and liver when taken in as food, and, above all, in the case of a dyspeptic. The rule, however, is that we all have frequent temporary derangements of the stomach, and therefore no one can count on impunity if he eat tuberculous meat. Among animals the evidence of this is abundant, especially in the case of the young living on infected milk. A few years ago, at a large public institution in New York, the hogs fed the offal of the tuberculous cattle slaughtered, became in great proportion tubercular. In the way of direct experiment Zurn, Gerlach, Johne, Kolb, Toussaint, Chauveau, and a host of others have conveyed tuberculosis to guinea-pigs, rabbits, fowl, swine,

dogs, cats, and other animals by feeding tuberculous products. All did not suffer, but a considerable number, embracing all the different species of animals named, became tuberculous. In three hundred and twenty-two experiments recorded by Johne 13 per cent became tuberculous.

The *red flesh* is usually remarkably free from tuberculous deposits, and it has been claimed that its juices are destructive to the bacillus, and that flesh can, therefore, be eaten with impunity. To determine this Schmidt fed the flesh of a tuberculous ox to fowls, and produced abdominal tuberculosis. Toussaint fed it to pigs, Viseur to cats, and Galtier to sheep and rabbits with the same result. All that can be said for flesh is that in cattle it is less frequently the seat of tubercle than the internal organs, and that, therefore, the eating of it is somewhat less dangerous. That it cannot be considered harmless may be inferred from the fact that, in advanced or generalized tuberculosis, the bacillus is found in the circulating blood, and that the blood contained in the capillary vessels of the muscles (red flesh) is therefore infecting. There is the further consideration, that the lymphatic glands, which are the favorite seats of tubercle in all parts of the body, are quite numerous in the muscular system, and the enlarged tuberculous glands beneath the skin and between the muscles become valuable means of recognizing the disease. The groups of such glands most commonly affected in cattle are those situated around the throat, beneath the tongue, in front of the shoulder blade, inside of the elbow, in front of the first rib, in front of the stifle, and in contact with the udder. In addition to these are many smaller masses of gland tissue, not recognizable without the microscope in health, but which in tuberculosis often stand out as peas, beans, or hazel nuts under the skin. These are most commonly found on the side of the belly, between the last rib and the hip bone. Then there are many groups of lymphatic glands more deeply ensconced in the muscles, and others in contact with the breast and back bones, which are beyond the reach of examination in life, but all of which go with the dressed carcase and contaminate the beef

as sold. Finally, in swine, in place of the juice of the muscle forbidding the invasion of the bacillus, this tissue becomes a favorite seat of the rather soft tubercles. The flesh of tuberculous swine is, therefore, more dangerous as a food than that of the infected ox.

It is only fair to say that the juice of the apparently sound muscle of an ox with localized deposits of tuberculosis is less dangerous than are distinctly diseased parts. Chauveau and Arloing found that guinea-pigs fed tubercles from cows were, without exception, rendered tuberculous, while others fed the muscle juice of the same animals became affected only in the proportion of eight per cent. Nocard and Galtier respectively, by inoculating with the muscle juice of tuberculous cows infected in the different attempts 5 and $5\frac{1}{2}$ per cent. This is a small percentage of infection, but that there was any infection at all goes to condemn the whole carcase, for no one can tell whether the bacilli are confined to one part or uniformly diffused, and if they are uniformly distributed, as is altogether the most probable, then the carcase of four hundred pounds must presumably contain a large number of germs, and must endanger a great number of consumers.

If the flesh of animals with even local tuberculosis must be eaten, it should only be done as canned meat, which has been subjected to prolonged heating, and in what has been boiled or fried any shade of the red, bloody color should be warrant for rejecting it.

That such meat is put upon the market is all too certain. Nor is it to be recognized by any faulty or defective appearance. German reports inform us that, of the tuberculous cattle found in their abattoirs 24 per cent furnish beef that would pass as the first quality; 44 per cent as of second quality; and 27 per cent as of third quality.

Milk is also a dangerous medium of infection. This is especially so if the udder is itself involved in the disease—a very frequent condition of things. Bang, Galtier, May, Nocard, and Bollingér all produced tuberculosis by inoculating with such milk. Woodhead and McFadyean produced

the disease in six out of thirty-one trials. Apart from the udder disease, the milk is especially likely to prove infecting when tuberculosis has become generalized, the tubercles being extensively distributed through the body. In such a case the bacilli have invaded the blood to a large extent, and they pass through every organ in which the blood circulates. Hence the milk is almost constantly contaminated.

It is not always easy to determine that the udder is absolutely free from tubercle, but in cases in which it is apparently free the milk is still frequently infecting.

Bang produced tuberculosis by injecting such milk, once only in twenty-eight times, Ernst in 37.5 per cent of his trials with guinea-pigs, and 15.5 per cent of the rabbits. Schmidt-Muhlheim, May, Stein, Baumgarten, Fischer, Herschberger, Gunther and Harms, Siedamgrotzky, Gerlach, Peuch, and Hedley were also successful in producing tuberculosis with such milk. Baum says that the milk of tuberculous cows is infecting in 60 to 70 per cent of the cases.

This is a question of surpassing importance, considering how much milk is used on our tables daily; how universally it is fed to infants and invalids, and how the skimmilk, buttermilk, and whey are fed to our calves, swine, and fowls. For the farmer's own profit it is imperative that he eradicate this scourge from his herd, and it is a question of life or death with the child or invalid whether he can get his milk free from the bacillus.

Whey, *skimmilk*, and *buttermilk* are, as a matter of course, infecting if obtained from infecting milk.

Butter appears to have been less frequently put to the test than other dairy products. Bang, however, put a rabbit on the butter of a tuberculous cow, and in three months it died tuberculous.

Cheese has also been comparatively little investigated. Galtier, however, fed to two guinea-pigs cheese made from the milk of tuberculous cows eleven months before, and he thereby infected the guinea-pigs. The tuberculosis in the guinea-pigs was successfully inoculated from these animals

upon others, so that no doubt remained as to the true nature of the affection. At the end of the twelfth month he found this cheese no longer infecting.

RELATION OF TUBERCULOSIS IN MAN AND BEAST.

I never speak on this subject without dreading that I shall be thought an alarmist. I certainly have no intention of acting that part. For thirty years I have believed tuberculosis contagious, and that it was transmitted from beast to man, as well as from man to beast. But the public mind was not prepared to act on such a belief. Fifteen years ago, when dealing with the lung plague of cattle, I was often urged to make a clean sweep by dealing with tuberculous cows as we did with the lung plague ones. I dissuaded my coworkers at that time on the ground of policy. There was at that time no public spirit to sustain us in such a course, and there was not sufficient money available to pay for the animals killed. But times have changed; the lung plague we have extirpated from the continent, and men's minds are open to the importance of tuberculosis, a subject far closer to the home and heart than lung plague ever could be. Lung plague affected the pocket, robbing us of a few millions a year, tuberculosis costs us our household treasures, our strong men and tender women, our laughing children, and our revered parents. The time is come to speak the truth on this matter, not in the impassioned words of an alarmist, but in a sober statement of fact. The dealing with a disease of this kind is by no means the simple matter of dealing with lung plague. *That* affected cattle only, and could be crushed out speedily and effectually by the extinction of the whole infected herd and the disinfection of the premises. Tuberculosis, on the other hand, may be maintained by almost any genus of animal, wild or tame; it may be carried by prowling vermin or migrating birds, and finally, as occurring in man it cannot be instantly done away with, but must be recognized as a standing menace to his neighbors and his animal dependents. We cannot, therefore, expect the same speedy and thorough effects with tuberculosis that were

obtained with lung plague. But, none the less, we are called upon by every consideration of humanity, and by every rule of personal and political economy, to begin the good work which shall one day result in the extinction of this scourge of our civilization in house and herd alike.

At present in the human population of New York State every eighth death is from consumption. No other single disease at all approaches this in the number of its victims. Yet practically nothing is being done to restrict its ravages. Now, I don't say that the extinction of this disease in farm animals would put a stop to the affliction in man. Man contracts the disease from man to a greater extent, doubtless, than he does from all the domestic animals together. But, at the same time, no inconsiderable amount of human tuberculosis is undoubtedly contracted from the lower animals, and this important source of infection, which can certainly be cut off with great profit to the stock owner, should be done away with at once.

To take but the one source, that of our dairy herds, we find that, where cattle are few or absent, or where they are kept all the time in the open air, and are, therefore, little exposed to infection, consumption is usually less prevalent in the human family. Among such places I may name Northern Norway, Sweden, Lapland, and Finland, where reindeer replace the cattle; Hudson Bay, and the islands of the Pacific, where no cattle exist; and the Scottish Hebrides, Iceland, and Newfoundland, where cattle are few. In Algiers, though a resort for consumptives, yet cattle are few, and live apart from the cities and in the open air, and tuberculosis does not increase. In Italy, on the northern shore of the same sea, where cattle are housed, tuberculosis has become the scourge of man and beast. In Australia, the great resort of the English consumptive, the disease, formerly unknown, has become exceedingly prevalent, and the same already promises to be the case for our own Minnesota. The Indians of the Northwest furnish the most striking illustration of the infection derived from cattle and fostered by unwholesome conditions

of life. Dr. Treon, in the "American Practitioner" describes the poor, emaciated, diseased animals furnished to the Indians, how the Indians eat the liver, tallow, and entrails raw, and how the beef which is to be preserved is dried, pounded, and packed in skins to be eaten later without cooking. Frequently they eat animals that have died of disease, and from the mode of dividing the beef, it is probable, he says, that at least one hundred persons may become inoculated by a single diseased animal. Dr. Holder, in the "Medical Record" (August 13, 1892), gives us some of the results. At Green Bay, Wis., Tulalip, Wash., and Western Shoshone, Nev., 50 per cent of the total Indian mortality is from tuberculosis; at Lower Brulè, Dak., scrofula is present in 60 per cent of the Brulè Sioux under 21 years, and at Crow Creek, Dak., fifty out of a total Indian population of 1,200 die every year of consumption and scrofula. Apart from increase, this would kill out the race in twenty-four years. This is the dark side of the question, and is worthy of study by those who think that the dangers of tuberculosis in cattle are too insignificant to demand serious attention.

If that is the lesson as to cattle, it is no less so as regards pigs and fowls. Both of these classes are kept about slaughter-houses, and both fed on the offal uncooked, and, therefore, in the best possible condition to convey tuberculosis. All the diseased parts that are unmarketable go to them, and if any carcass is altogether unfit for sale, it can at least make pork and eggs. Now, I have no objection to such disposal of the refuse if it were first submitted to several hours' hard boiling. But as matters are now, so long as our herds furnish tuberculous animals to the slaughter-house, so long will tuberculosis be systematically developed in the hogs and fowls. Nor is it in the slaughter-houses alone that this culture of the contagion is ignorantly conducted. In a recent visit to Madison county, N. Y., where one herd had furnished six cases of tuberculosis, I found that neighboring farmers had secured the diseased carcasses to feed their poultry. Under the delusion that cattle alone suffered they had set about planting the germs in their own homesteads and herds.

Let me repeat that tuberculous pigs are even more dangerous than tuberculous cattle, because the tubercles are formed to a greater extent among the flesh which comes to our tables, rather than in the internal organs which are cast aside. As regards tuberculous fowls, it is enough to say that the germ obtained from them is especially virulent and dangerous.

REMEDIAL MEASURES.

It follows from what I have said that measures for the restriction and extinction of tuberculosis must consist largely in a scientific dealing with our herds of domestic animals. Such control of our herds demands the employment of professional skill of the best kind. We are confronted with two dangers: one is the danger of ignoring a most deadly contagion and allowing it a free and unrestricted field for its ravages; the other is the risk of the exclusion of valuable products from the market, because the animals or herds furnishing them are wrongfully pronounced to be victims of tuberculosis. Recently, I have found in different parts of New York cattle that had been secluded for months as tuberculous when they only suffered from a chronic nasal catarrh, kept up by twigs which they had broken off inside the nose. The average New York veterinarian, created by act of the legislature, without *alma mater* and without education, does incomparably more harm than good in dealing with such diseases. Even the graduates of our veterinary schools, conducted as they are with a short and inadequate curriculum, and in large cities where the clinical education is confined practically to horses, are rarely equipped with the skill and experience necessary to such a work. But they are the best material ready to our hand, and by selection and training their ranks may furnish available agents.

The skill necessary to this work is of a high order, and the patient, careful, and truth-loving devotion required, is no less high. An acute or advanced case of tuberculosis of the lungs may be easily distinguished. There is extreme emaciation, a frequent dry, husky cough, profuse discharge from the nose

of a nauseous yellow, muco-purulent matter, with fine flakes, or even gritty particles, a heavy offensive odor to the breath, inappetence, sunken, bloodless eyes, a scurfy, unthrifty, adherent hide, and general weakness and wretchedness. Then in the lungs are isolated patches that sound flat and solid on percussion, and there are sounds at intervals over the chest of wheezing or creaking, or like the bursting of fine bubbles, and a variety of other sounds which indicate the different morbid conditions. In such cases the condition may be all too evident, and it only lacks the microscopic demonstration of the bacilli to make the conclusion absolutely certain. But when the lung symptoms are obscure, the area of dullness and morbid sounds hidden under the thick muscular shoulder, or drowned by the loud continuous rumbling of the bowels, when the tubercles are not in the lungs at all, but in the lymphatic glands in the chest or abdomen, or in the glands under the skin, in the liver, spleen, kidney, bones, or elsewhere, it may require all the skill of the most accomplished man to detect the affection, and even he may be finally left in the dark. He cannot, like the doctor, secure from the patient a history of the case, he cannot ask where there is pain or suffering, nor anything as to feelings that would be a valuable guide to the physician. If he examines the discharge from the nose and finds rod-shaped bacteria he must be skilled enough in the staining of these to say whether they are the germs of tubercle or of some other disease. In case even this fails, he may be thrown back on a graduated hypodermic injection of Koch's lymph, which will develop an elevated body temperature in the tuberculous and leave the non-tuberculous unaffected; or he may have to resort to the inoculating of another less valuable animal with the morbid products, and wait for the result.

When I say that these occult cases often constitute the majority, I only state what the inspector has many a time to deal with, and I intimate how difficult the work to which he is called, and the skill and care requisite to its successful performance.

Under such circumstances, the physician is even more help-

less than the veterinarian. He may in some senses be a better educated man, though this is by no means always the case, but he finds himself so nonplused by the entire absence of all voluntary assistance from the patient, he is so much in the dark as to the position and relations of the different organs in the quadruped, so entirely unacquainted with the normal sounds and other indications to be expected in the different parts, and so ignorant of the different diseases of the animal that may be easily confounded with tuberculosis, and so uncertain of his ground at every step that his conclusions are quite as likely to be wrong as right, and it is only after a special training in the structure and diseases of animals that his medical skill can be availed of in this work.

The dissemination of sanitary knowledge among stock owners will be an important element in this general work. The purchaser cannot afford to take an animal from an unknown source, and even from a known herd he ought to seek with it substantial evidence that no animal from such herd has died or been disposed of for disease in recent years, and that no suspicious sickness exists in such herd at the time of sale. Above all, he should take no animal from a city or suburban dairy, nor from a swill stable. Healthy animals can be had from such places, but the risk is great and in the case of a disease so insidious as tuberculosis, he cannot afford to take the risk. Now cattle from country herds that have had, in the main, an out-door life can always be had, and with a knowledge of the previous soundness of the herd are greatly to be preferred.

Another important precaution is the inspection of cattle for slaughter. To make this efficient we must have something more than the perfunctory inspection of the dressed meat in the butcher's stall. Under such a system some of the most dangerous diseases which affect the blood or internal organs without injuring the appearance of the meat are inevitably thrown on the market. Many cases of tuberculosis, in which the lungs and lymphatic glands of chest and abdomen are affected, would present fair carcasses. In German abattoirs the

tuberculous animals furnished what appeared first quality beef to the extent of 24 per cent of their numbers.

The skilled inspector must, therefore, examine animals before death and during slaughtering, and instruments and methods of precision must be called into requisition when necessary to determine the true nature of the case. Such inspection, however, demands a public municipal slaughter-house, under strict sanitary regulations, and where all butchers can hire at low rates all facilities necessary for slaughtering and for utilizing the products. In the great cities of Europe such institutions are conducted most profitably not only on the ground of sanitation, but of economy and inoffensiveness as well. In the Edinburgh abattoir a slaughtering booth, pen, and yard, with all facilities for utilization of the products can be rented for \$40 a year.

Such municipal abattoirs are also the true remedy for the existing system by which the market for fat stock and that for dressed meat are both controlled by a few great packers, who have set up mammoth establishments at the great centres of the cattle trade. Under the existing system by which the United States Government furnishes official inspectors at such centres and denies them elsewhere, thereby giving to these packers and to no one else certificates which will secure them the admission of their meat products into the markets of Europe, it gives to these packers a virtual control and monopoly of the market at home and abroad; for, having the exclusive disposal of all the surplus, they can practically dictate prices to both farmer and consumer.

A system so manifestly unrepblican and unjust cannot continue, and its proper remedy lies in the establishing of municipal abattoirs and inspectorships which shall place all good meats on a par, and will at once serve to purify our herds and protect the health of the public.

I must not close without emphasizing the importance of a due consideration of property rights.

Sanitary laws which in any way ignore or disregard the rights of property have within themselves the seeds of defeat.

If in our municipal abattoir the butcher cannot conduct his business as well and economically as he could in his own establishment, he or his competitors will circumvent or evade the law in some way. If the stock owner is not fairly reimbursed for his animals slaughtered for the protection of the public health and the purifying of the herds of the country, unscrupulous men will find ample means of trading off the as yet incipient and occult cases of tuberculosis, and of scattering the infection widely in new herds. Compensation must stop short of making the sanitary bureau a profitable customer for animals at sound prices, but it must be so liberal as to enlist the ready coöperation of the owner of the sick beast in having it disposed of.

STATE BOARD OF AGRICULTURE.

IMMIGRATION DEPARTMENT.

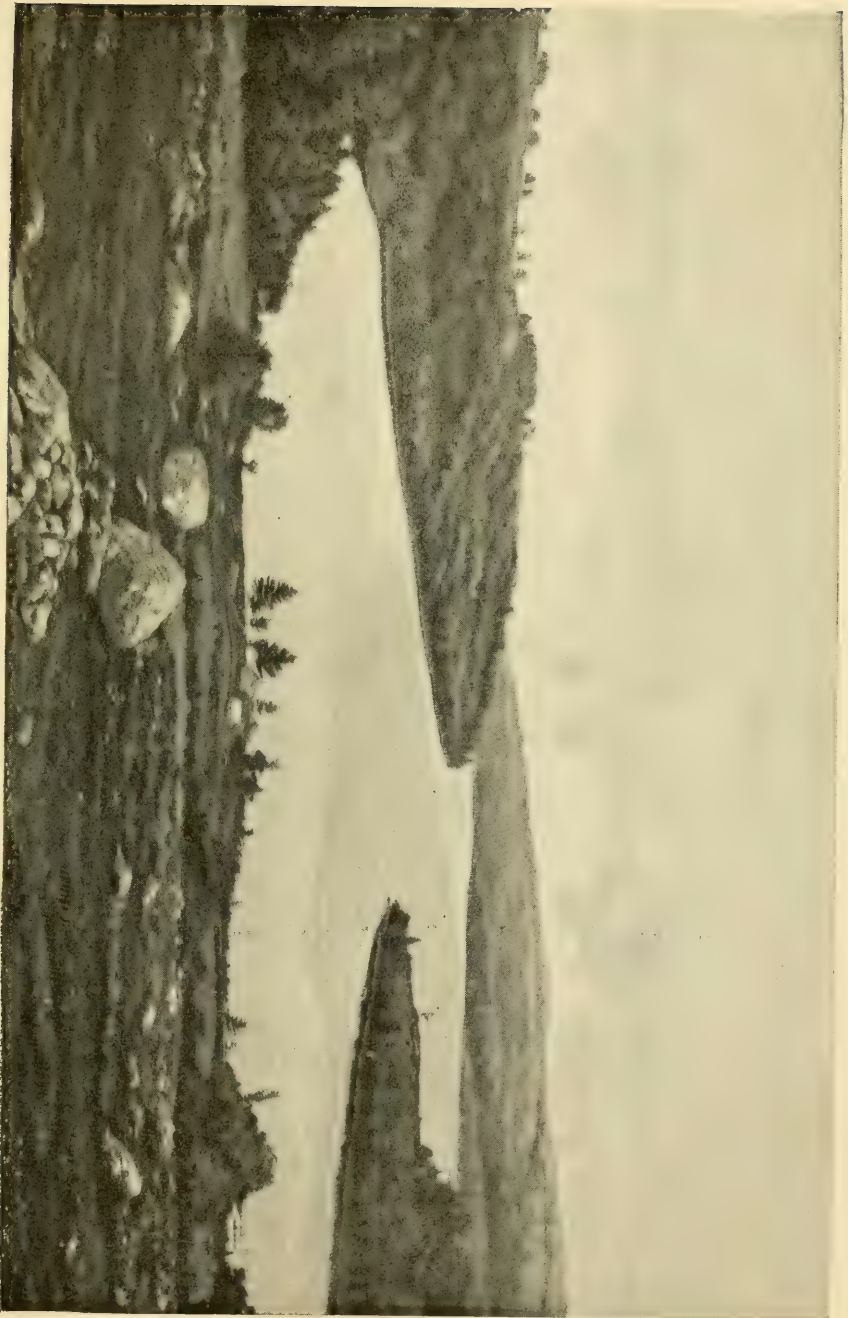
CONCORD, November 1, 1892.

Since our previous report was made, the public statutes have taken effect, placing the work that was formerly done by the Commissioner of Immigration in the office of the Secretary of the State Board of Agriculture. The same line of work has been followed that was inaugurated under the separate commission and the results have been of a similar nature. Six thousand pamphlets have been distributed advertising the advantages of New Hampshire as a summer resort and the opportunities offered for purchasing farms for agricultural purposes or for summer homes. Hundreds of letters of inquiry have been received and replies sent to persons from all sections of the country. The work of this department has resulted so favorable and been of such practical utility to the State that similar departments have been provided in nearly all the New England States. Following will be found a list of the summer hotels and boarding houses which have become of so much importance in developing the agricultural resources of New Hampshire that they very properly are given place in the agricultural report of the State.

SUMMER HOTELS AND BOARDING-HOUSES.

Proprietor or Landlord.	Name of House.	P. O. Address.	No. of Guests.
ACWORTH.			
H. R. Neal.....	Mountain View.....	Acworth.....	12
Mrs. Charles Allen.....	Sunset Hill Farm.....	".....	12
C. H. Blanchard.....	".....	".....	"
R. J. Carey.....	".....	".....	"
Abner G. Livingston.....	".....	South Acworth.....	10
Mrs. Amelia Mitchell.....	Mitchell Residence.....	Acworth.....	8
Charles Humphrey.....	".....	".....	"
ALBANY.			
Mattie B. Davis.....	Front Dale.....	Albany.....	"
J. N. Piper.....	Bear Mountain.....	South Albany.....	25
J. N. Shackford.....	Shackford.....	Conway.....	10
Richard R. Hill.....	Hill House.....	".....	"
James Mayhew.....	Carrigan House.....	".....	12
Joseph Annis.....	".....	".....	8
David Hurley.....	Hillside Cottage.....	".....	12
ALEXANDRIA.			
E. T. Bailey.....	Goldenrod Farm.....	Alexandria.....	20
Calvin Brown.....	".....	".....	20
N. G. Smith.....	Mt. Cardigan Cottage.....	".....	14
Woodbury Sleeper.....	Elmwood Farm.....	".....	20
A. F. Cheney.....	Willowdale Farm.....	".....	6
G. A. Rollins.....	".....	".....	14
C. F. Wheat.....	".....	".....	"
ALTON.			
D. E. Wheeler.....	Winnipiseogee Hotel.....	Alton Bay.....	80
George Craine.....	Hillside Cottage.....	".....	25
Mrs. Clara A. Gilman.....	Cottage Hall.....	Alton.....	"
Chester A. Twombly.....	Green Valley Lodge.....	Alton Bay.....	12
ALSTEAD.			
H. P. Chapin.....	Alstead House.....	East Alstead.....	30
G. G. Banks.....	Warren Pond House.....	".....	20
A. M. French.....	Ledge Side.....	".....	20
George E. Newman.....	Pine Cliff.....	".....	"
Mrs. C. A. Partridge.....	".....	".....	6
Fred Wright.....	".....	Alstead Centre.....	"
AMHERST.			
John Wallace.....	Maplewood.....	Amherst.....	"
Frank W. Noyes.....	Lake Shore.....	".....	15
William Colston.....	Baboosic.....	".....	20
Mary Putnam.....	Soda Spring House.....	".....	"
H. C. Day.....	Rockland House.....	".....	6
Pliny Odell.....	Walnut Hill House.....	".....	10
John H. Dodge.....	Idlewild.....	".....	15
S. B. Webster.....	Webster House.....	".....	16
William Melendy.....	Quoquinnapassakassan- anaguog.....	".....	30
A. S. Wilkins.....	".....	".....	10
Miss French.....	".....	".....	10

GREGG'S POND, ANTRIM.



SUMMER HOTELS AND BOARDING-HOUSES. — *Continued.*

Proprietor or Landlord.	Name of House.	P. O. Address.	No. of Guests.
AMHERST.—Continued.			
F. L. Macomber.....	Pleasant View.....	Amherst Station.....	20
M. S. Batchelder.....	Tumbleton.....	".....	12
ANDOVER.			
H. C. Weymouth.....	Weymouth Farm.....	East Andover.....	
N. J. Batchelder.....	Highland Farm.....	".....	25
H. N. Burt.....	Maple Cottage.....	West Andover.....	25
F. H. Flanders.....	Hillside Farm.....	East Andover.....	18
F. G. Hersey.....	".....	".....	
John F. Emerson.....	".....	Andover.....	
Mrs. H. R. Fellows.....	".....	".....	
Mrs. Susan D. Curtis.....	".....	West Andover.....	
Jonathan Cilley.....	".....	East Andover.....	
ANTRIM.			
A. B. Crombie.....	Windsor House.....	North Branch.....	
Milton Tenny.....	Antrim.....	Antrim.....	50
C. F. Holt.....	Lake House.....	".....	40
J. W. Bass.....	Willow Dale Farm.....	".....	12
Charles G. Griffin.....	".....	North Branch.....	30
J. F. Tenney.....	".....	Antrim.....	18
Mrs. Whitley.....	".....	".....	
Mrs. L. Campbell.....	".....	North Branch.....	
H. L. Lawrence.....	".....	".....	12
John M. Duncan.....	Shady Knoll.....	Antrim.....	
L. T. Lovell.....	".....	".....	8
George F. Perry.....	Pinnacle.....	".....	
H. W. Muzzey.....	Carter.....	".....	10
Mrs. J. R. Symes.....	Hill Side Farm.....	".....	20
Sam A. Holt.....	Tip-Top House.....	".....	
C. R. Jameson.....	Mountain Side Farm.....	".....	12
A. Colby.....	Mansion.....	Hillsborough Bridge.....	15
ASHLAND.			
J. M. Cotton.....	Squam Lake House.....	Ashland.....	50
D. S. Batchelder.....	Batchelder House.....	".....	40
B. T. Mills.....	Seven Pines.....	Plymouth.....	
Mrs. E. J. Hughes.....	".....	Ashland.....	16
B. F. Pease.....	".....	".....	100
ATKINSON.			
William B. Keynolds.....	Maple Farm.....	Atkinson.....	15
Wyman B. Knight.....	Maple Place.....	".....	12
James H. Noyes.....	High View.....	".....	8
Samuel P. Foote.....	".....	Atkinson Depot.....	
George P. Dow.....	".....	Atkinson.....	
Mrs. Harriet Fernald.....	".....	".....	
Washington B. Wason.....	".....	".....	
E. M. Carlton.....	".....	".....	
AUBURN.			
Charles W. Calef.....	Calef Hotel.....	Auburn.....	50
Mary A. Murry.....	Hill Farm.....	".....	25
Charles J. Esty.....	Maple Cottage.....	".....	15
Benjamin Eaton.....	Eaton Hill Farm.....	".....	12
George W. Pingree.....	Mountain View.....	".....	20
Samuel Bradeen.....	Sheldon House.....	".....	12
Irving F. Grant.....	".....	".....	
John Davis.....	Bunker Hill Farm.....	".....	20
BARTLETT.			
John Pendexter.....	Langdon House.....	Intervale.....	50
Pitman Brothers.....	East Branch House.....	Lower Bartlett.....	125

SUMMER HOTELS AND BOARDING-HOUSES.—*Continued.*

Proprietor or Landlord.	Name of House.	P. O. Address.	No. of Guests.
BARTLETT.—Continued.			
Frank George.....	Bartlett House.....	Bartlett.....	50
Mrs. C. C. Pendexter.....	Pendexter Mansion.....	Intervale.....	60
C. A. Tasker.....	Fairview.....	".....	.....
Mrs. H. A. Vickey.....	Pequawket.....	".....	.....
Walter Pitman.....	Pitman Hall.....	Lower Bartlett.....	100
C. Stephen.....	Stephen.....	Centre Bartlett.....	.....
E. A. Stevens.....	Cave Mountain House.....	Bartlett.....	.....
Joseph Mead.....	Centre Bartlett House.....	Centre Bartlett.....	40
BATH.			
William Symonds.....	Highland House.....	Bath.....	25
A. N. Blandin.....	Elmwood.....	".....	.....
Mrs. Hutchings.....	Old Stone House.....	".....	20
W. D. Thompson.....	Central House.....	".....	.....
Lucius Pierce.....	Elmwood.....	".....	20
C. W. & M. E. Jackman.....	.....	.....	.....
BELMONT.			
Stephen Taylor.....	Bay View.....	Laconia.....	50
Frank A. Randlett.....	Forest House.....	".....	35
P. Randlett.....	Randlett House.....	".....	25
A. J. Young.....	Belmont Cottage.....	East Tilton.....	24
Henry Thompson.....	Highland House.....	Laconia.....	.....
G. H. Ingalls.....	Brown's Hotel.....	Belmont.....	30
BENNINGTON.			
J. C. Dodge.....	Dodge Farm.....	Bennington.....	40
J. E. Favor.....	Highland House.....	".....	30
E. A. Holt.....	Holt Farm.....	".....	20
B. D. Felch.....	.....	".....	20
BENTON.			
E. B. & E. F. Mann.....	Tip-Top House.....	Benton.....	.....
Mrs. C. C. Taylor.....	Breezy Hill Farm.....	".....	10
O. L. Mann.....	.....	".....	.....
C. A. Veasey.....	Veasey Cottage.....	".....	10
C. B. Keysar.....	.....	".....	6
Mrs. George Dagmon.....	.....	".....	.....
BERLIN.			
H. F. Marston.....	Berlin House.....	Berlin Falls.....	75
C. C. Knapp & Son.....	Winslow House.....	Berlin.....	.....
BETHLEHEM.			
Ainslie & Webster.....	Maplewood Hotel.....	Maplewood.....	400
John Hopkins.....	Avenue House.....	Bethlehem.....	300
C. H. Davis.....	Maplewood Cottage.....	Maplewood.....	100
J. N. Turner & Son.....	Turner House.....	Bethlehem.....	75
Durgin & Co.....	Sinclair House.....	".....	300
A. J. Phillips.....	Prospect House.....	".....	80
D. W. Ranlett.....	Ranlett House.....	".....	75
David Phillips.....	Bellevue House.....	".....	85
— Eastman.....	Tamarack Cottage.....	".....	.....
R. M. Hodgdon.....	Elm House.....	".....	.....
J. B. Bean.....	Georgia Cottage.....	".....	20
F. P. Moulton.....	Bethlehem House.....	".....	.....
Mrs. S. P. Swett.....	Swett Cottage.....	".....	.....
R. H. Gardner.....	Gardner Cottage.....	".....	.....
Mrs. D. F. Davis & Son.....	Hillside.....	".....	50
A. W. Blandin.....	Blandin House.....	".....	30
H. Nye.....	Mount Agassiz.....	".....	.....
W. H. Presby.....	Woodlawn House.....	".....	25

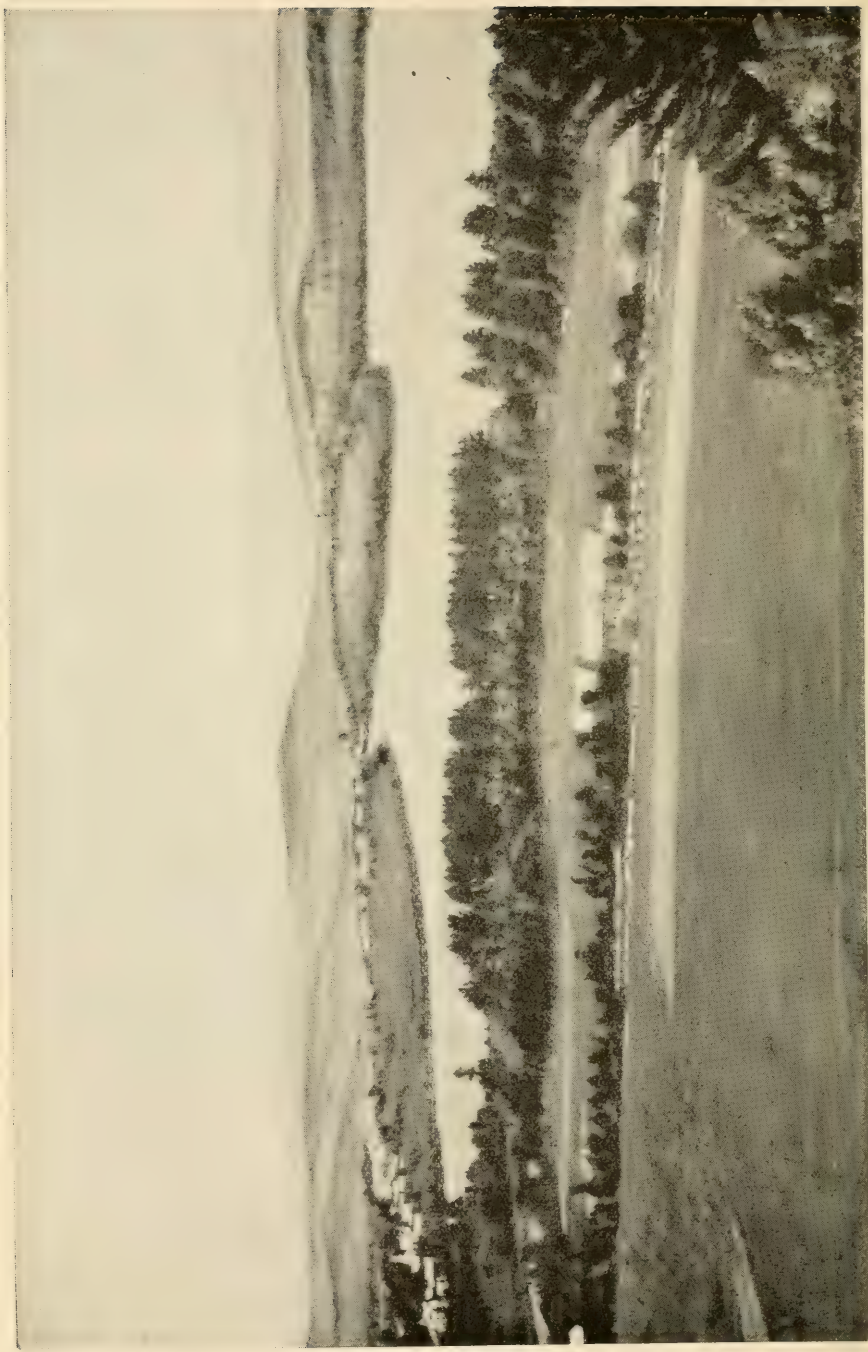


SUMMER HOTELS AND BOARDING-HOUSES.—*Continued.*

Proprietor or Landlord.	Name of House.	P. O. Address.	No. of Guests.
BETHLEHEM.—<i>Cont'd.</i>			
I. A. Taylor.....	Mountain View.....	Bethlehem.....	20
F. H. Abbott.....	The Uplands.....	".....	100
J. H. Clark.....	Highland House.....	".....	
C. H. Clark.....	Alpine House.....	".....	60
L. M. Knight.....	Centennial House.....	".....	60
A. S. Phillips.....	Farm Cottage.....	".....	
G. A. Gilman.....	Garfield Cottage.....	".....	12
Mrs. F. Glazier.....	The Vista.....	Littleton.....	15
F. E. Derkshire.....	Howard.....	Bethlehem.....	
G. L. Gilmore.....	Broad View.....	".....	
J. K. Barrett.....	Strawberry Hill House..	".....	
C. L. Bartlett.....	Mt. Washington House..	".....	70
H. E. Smith.....	Echo Cottage.....	".....	
B. Tucker.....	Park Cottage.....	".....	
G. W. Smith.....	East View House.....	".....	
E. R. Thompson.....	Prospect Cottage.....	".....	26
Mrs. Padelford.....	Idlewild Cottage.....	".....	
F. L. White.....	Plummer Cottage.....	".....	
A. Spring.....	Greenfield House.....	".....	
BOSCAWEN.			
Hannibal Bonney.....	Penacock House.....	Penacock.....	30
Henry Coffin.....	Chestnut Farm.....	Boscawen.....	
C. W. Keniston.....	Hillside Farm.....	".....	25
Henry Ferrin.....	Hillside Farm.....	".....	6
Samuel Choat.....	".....	".....	
Jacob Hosmer.....	".....	".....	
BOW.			
George W. Colby.....	Chatagee.....	Bow Centre.....	
J. S. Austin.....	".....	North Bow.....	10
BRADFORD.			
George A. Smith.....	Bradford House.....	Bradford.....	
Charles Gillis.....	Gillis.....	".....	60
Henry McCoy.....	Bradford Springs.....	East Washington.....	150
Addison S. Cressey.....	Meadow Brook Farm.....	Bradford.....	25
Greeley M. Cressey.....	Sunny Side.....	".....	20
Anson S. Dill.....	".....	".....	
Sarah P. Morse.....	".....	".....	20
George B. Andrews.....	Hillside Farm.....	".....	20
L. B. Butman.....	Butman House.....	".....	20
H. C. Felch.....	Hill Rest.....	".....	10
Mrs. C. E. Hadley.....	".....	".....	10
F. H. Patch.....	".....	".....	10
Albert Larkin.....	".....	".....	
BRENTWOOD.			
John A. Rowell.....	".....	Exeter.....	15
Addison B. Rowell.....	".....	".....	25
Peter Davis.....	".....	Brentwood.....	10
E. G. Brackett.....	".....	".....	12
Miss Emma Sinclair.....	".....	".....	
Mrs. E. E. Thompson.....	Thompson Farm.....	".....	6
BRIDGEWATER.			
William A. Sawyer.....	Lake View.....	Bridgewater.....	75
D. Y. Fifield.....	Bay View.....	".....	50
Mrs. Orrin L. Dolloff.....	Eln Lawn.....	".....	25
G. B. Dolloff.....	".....	".....	14
Hiram S. Tilton.....	".....	".....	

SUMMER HOTELS AND BOARDING-HOUSES. — *Continued.*

Proprietor or Landlord.	Name of House.	P. O. Address.	No. of Guests.
BRISTOL.			
M. F. Wilbur.....	Bristol House.....	Bristol.....	100
E. T. Pike.....	Maple Cottage.....	".....	12
S. S. Brown.....	Newfound Lake Farm.....	".....	25
J. H. Ackerman.....	Pine Grove Farm.....	".....	12
Mrs. R. S. Young.....	Florence Cottage.....	".....	10
BROOKFIELD.			
Henry W. Peavey.....	Moose Mountain Cottage.....	Wolfeboro' Junction.....	
John W. Prescott.....		Union.....	
Jonathan W. Sanborn.....	Pine Grove Farm.....	Wolfeboro' Junction.....	
BROOKLINE.			
C. L. Forbes.....	Brookline House.....	Brookline.....	
Mrs. L. P. Peabody.....	Elmwood House.....	".....	
N. W. Colburn.....		".....	8
James S. Cox.....		".....	
CAMPTON.			
J. C. Blair.....	Blair Hotel.....	Blair.....	65
E. H. Sanborn.....	Sanborn House.....	West Campton.....	130
C. H. Sprague.....	Sunset Hill House.....	Campton Village.....	50
Sawyer & Marvell.....	Hillside.....	".....	45
C. H. Damon.....	Highland House.....	".....	
A. B. Cook.....	Maplewood House.....	".....	20
C. G. Avery.....	Maples.....	Campton.....	25
G. S. Bartlett.....	Three Elms.....	".....	20
F. P. Hart.....	Willey House.....	Campton Village.....	10
T. S. Pulsifer.....	Cottage Farm.....	Plymouth.....	10
S. S. Mitchell.....	Bald Hill House.....	".....	10
S. F. Hill.....	Hills Cottage.....	".....	16
D. B. Pulsifer.....		".....	8
CANAAN.			
Sawyer & Trull.....	Jerusalem Springs House.....	Canaan.....	50
Mrs. David Whittier.....	Pinnacle House.....	Canaan Street.....	50
Henry Martin.....	Twin Cottages.....	".....	30
H. B. Tenney.....	Sunset House.....	".....	25
A. D. Howe.....		".....	
H. W. Miller.....		".....	
Mrs. Gilbert Spencer.....	Prospect Farm.....	".....	20
CANDIA.			
Thomas B. Turner.....		Candia.....	
Jesse M. Sargent.....		".....	
Mrs. G. Lang.....		".....	
Mrs. Gilchrist.....		".....	
William Patten.....		".....	
F. D. Rowe.....	Rockdale Cottage.....	".....	10
Frank W. Eaton.....	Highland View.....	".....	25
CANTERBURY.			
George Fletcher.....	Hancock House.....	Canterbury.....	30
O. W. Dow.....	Pippo House.....	East Canterbury.....	12
George Gale.....	The Maples.....	Canterbury.....	25
John H. Batchelder.....		".....	6
A. B. Lovering.....	Lovering.....	".....	20
Edwin B. Peverly.....	Peverly Farm.....	".....	20
Leone J. Chase.....	Osgood House.....	".....	25
Jonathan C. Greenough.....	Picturesque Retreat.....	".....	15
Myron C. Foster.....	Hillside Farm.....	".....	10
Joseph R. Hancock.....	Canterbury House.....	Upland.....	50
J. P. Dearborn.....	Elm Cottage.....	Canterbury.....	



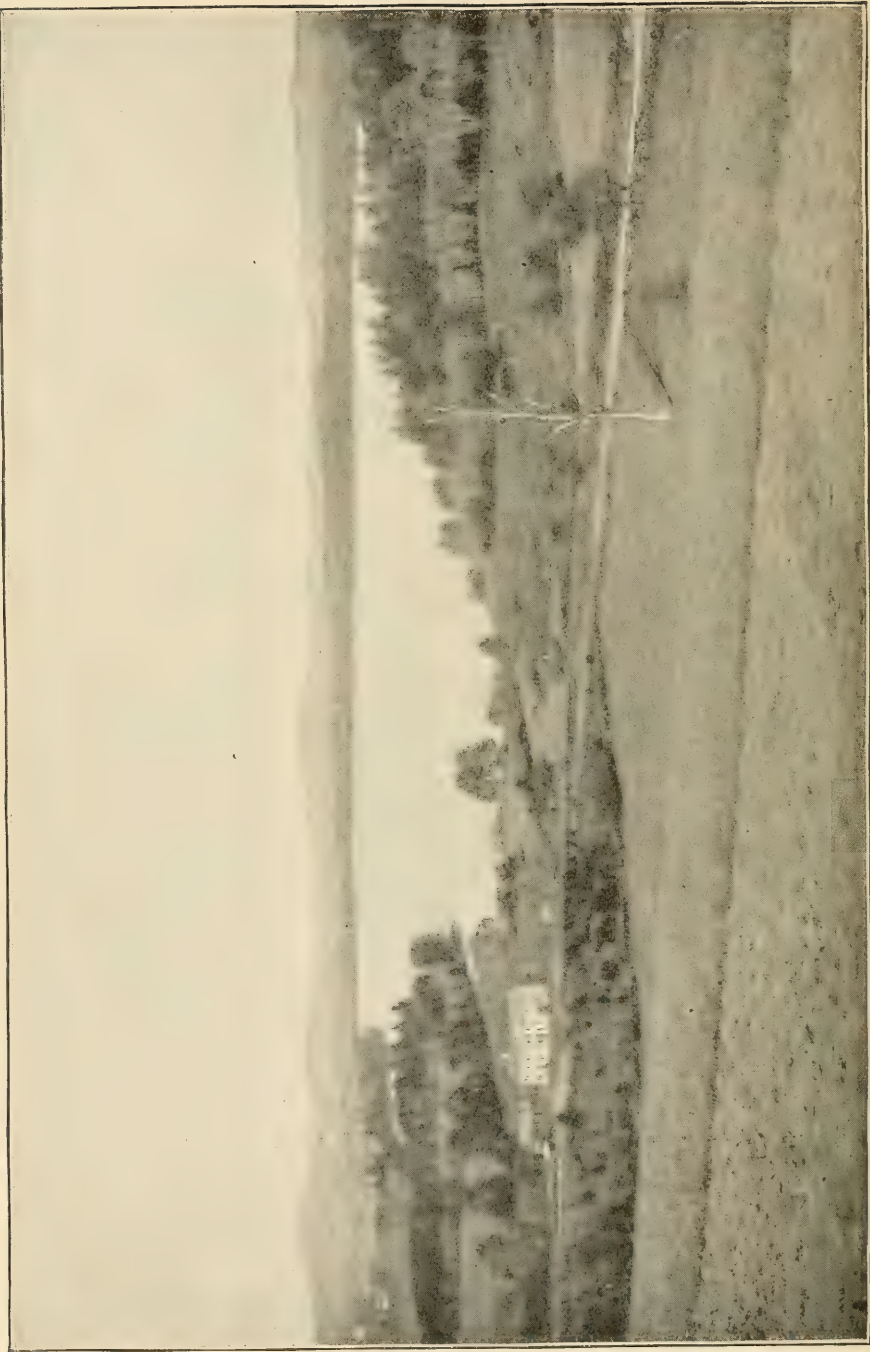
CRYSTAL LAKE, CANAAN.

SUMMER HOTELS AND BOARDING-HOUSES. — *Continued.*

Proprietor or Landlord.	Name of House.	P. O. Address.	No. of Guests.
CARROLL.			
Barron & Merrill.....	Crawford Hotel.....	Crawford Hotel.....	450
F. A. Cofran.....	Twin Mountain Hotel...	Twin Mt. Hotel.....	300
Barron & Merrill.....	Fabyan Hotel.....	Fabyan's.....	250
Barron & Merrill.....	Mount Pleasant Hotel...	Mt. Pleasant Hotel...	400
S. W. Kelley.....	Mount Martha.....	Twin Mt. House.....	25
Charles S. Miles.....	Pleasant View.....	" ".....	20
Dora Chase.....	Chase Cottage.....	" ".....	20
R. D. Rousevel.....	White Mountain House.	.....	150
Barron & Merrill.....	Summit House.....	Mount Washington..	250
H. E. Jenness.....	Elmwood Hall.....	Twin Mts.....	25
CENTRE HARBOR.			
J. L. Huntress & Son....	Senter House.....	Centre Harbor.....	150
S. F. Emery.....	Moulton House.....	" ".....	75
Benjamin F. Kelsea.....	Locust Cottage.....	" ".....	25
David W. Cram.....	Grampian House.....	Meredith.....	30
Mrs. Rhoda A. Benson....	Elm House.....	Centre Harbor.....	30
David M. Whitche.....	.....	" ".....	.....
Dr. William A. Page.....	.....	" ".....	25
A. W. Canney.....	Grand View Cottage.....	Meredith.....	12
Henry C. Sturtevant.....	Sturtevant Farm.....	Centre Harbor.....	12
Stephen Wentworth.....	Willow Cottage.....	" ".....	.....
Mrs. B. F. Wentworth....	Brown Cottage.....	" ".....	12
George Sturtevant.....	Elm House.....	" ".....	25
J. B. Greene.....	Sunny Side Cottage.....	Moultonborough.....	8
Mrs. F. F. Greene.....	Red Hill Cottage.....	Centre Harbor.....	20
Mrs. Alonzo Perkins.....	Pine Hill Cottage.....	Meredith.....	14
CHARLESTOWN.			
C. S. Symonds.....	Eagle Hotel.....	Charlestown.....	50
Mrs. T. S. Evans.....	Evans House.....	" ".....	20
Horace Kimball.....	Elm House.....	" ".....	.....
Mrs. F. W. Harris.....	Harris House.....	" ".....	14
Mrs. A. C. May.....	Maplewood.....	" ".....	8
CHATHAM.			
Charles S. Chandler.....	Chandler's Cottage.....	North Chatham.....	12
Dana Hill.....	.....	South Chatham.....	10
D. O. Pickering.....	.....	" ".....	.....
Thomas Smith.....	.....	" ".....	4
CHESTER.			
Samuel L. Marston.....	Emerson Hotel.....	Chester.....	.....
Albert J. Merrill.....	Merrill House.....	East Chester.....	40
Mrs. Henry A. Hall.....	.....	" ".....	20
Addison A. Bean.....	.....	Chester.....	20
Horace E. True.....	Riverside Farm.....	Raymond.....	14
Frank E. Leighton.....	Highland House.....	Chester.....	30
George Hook.....	.....	" ".....	12
John A. Hezelton.....	.....	East Chester.....	.....
Mrs. Edward Hezelton....	.....	" ".....	.....
Barnard P. Robie.....	.....	Chester.....	.....
George N. West.....	Willowdale Cottage.....	" ".....	10
Willis S. Merrill.....	Orchard Farm.....	" ".....	10
Henry Moore.....	.....	" ".....	6
CHESTERFIELD.			
A. R. Mason.....	Prospect House.....	Keene.....	100
J. H. Goodrich, 2d.....	Lake View.....	Chesterfield.....	50
Dunton & Faro.....	Lakeside.....	Brattleboro, Vt.....	75
Luther Plumer.....	Woodside.....	" ".....	.....
Mrs. L. F. Bonney.....	.....	Chesterfield.....	.....

SUMMER HOTELS AND BOARDING-HOUSES. — *Continued.*

Proprietor or Landlord.	Name of House.	P. O. Address.	No. of Guests.
CHICHESTER.			
Elijah B. Young.....	.....	Chichester Centre ...	8
S. Ambrose Brown.....	.....	Pittsfield .....	.....
Ira Sanborn .....	.....	Chichester Centre .....	.....
CLAREMONT.			
Underhill & Bean.....	Belmont Hotel.....	Claremont.....	50
H. C. Fitch & Son.....	Sullivan House	"	70
C. M. Leete .....	.....	" .....	.....
Lyman Fitch.....	.....	" .....	10
G. A. Andrews.....	.....	" .....	20
J. W. Chapin.....	Hillside Farm.....	"	10
R. B. Tull .....	.....	" .....	.....
A. R. Campbell.....	.....	" .....	30
COLEBROOK.			
T. G. Rowan.....	Monadnock.....	Colebrook	100
Daniel Rowan.....	.....	" .....	40
S. B. Whittemore.....	.....	" .....	.....
W. H. Milliken.....	.....	" .....	.....
Addie Lyman.....	.....	" .....	.....
Davis Graham.....	Mountain View	"	16
Addison Corbitt.....	Maple Cottage.....	"	14
Mrs. W. T. Phillips.....	The Elms.....	.....	12
CONWAY.			
Recker & Hartshorn.....	Kearsarge Hotel.....	North Conway	250
Russell Brothers.....	Russell House.....	Kearsarge	135
S. Mudgett & Sons.....	Intervale	Intervale	300
M. L. Mason.....	Sunset Pavilion.....	North Conway	150
Dow & Hill.....	Ridge	Kearsarge	100
Alfred Eastman.....	Eastman	North Conway	90
L. J. Ricker.....	North Conway House.....	.....	75
L. L. Blood & Son.....	Conway House	Conway	100
Augustus Eastman.....	Artist Falls.....	" .....	.....
L. Wheeler & Son.....	Orient.....	Kearsarge	40
F. L. Plummer.....	McMellan	Conway	100
J. T. Randall.....	Randall .....	.....	75
T. C. Eastman.....	Moat Mountain	North Conway	30
Mrs. L. A. B. Jaffrey.....	Jaffrey	"	40
G. F. Wolcott.....	Edgewood Cottage.....	"	20
Dinsmore Brothers.....	Idlewild	Intervale	50
Mrs. S. D. Pendexter.....	Pendexter House.....	.....	.....
David Wakefield.....	Dundee Mountain.....	Conway Centre.....	25
G. A. Heath.....	Heath Cottage.....	Conway	15
O. W. Merrill.....	Merrill House .....	.....	20
J. D. Stott.....	.....	Conway Centre .....	.....
J. F. Stott.....	Atherton Farm.....	.....	25
J. P. Palmer.....	.....	Conway .....	.....
J. A. Barnes & Son.....	Bellevue	Intervale	75
G. W. Marden.....	Pine Grove	Conway	20
R. D. Litchfield.....	Centre Villa.....	" .....	.....
D. F. Pendexter.....	Pequawket Hotel .....	.....	.....
L. D. Mills.....	.....	Conway Centre.....	.....
E. R. Perkins.....	Perkins Farm.....	"	12
David Putnam.....	Putnam Cottage.....	"	10
C. H. Leavitt.....	Birch Hill Castle.....	Snowville	8
CORNISH.			
A. L. Peters.....	Valley House.....	Windsor, Vt.....	.....
George F. Watts.....	Hampshire	Cornish Flat.....	20
J. W. Pierce.....	Fairview	South Cornish.....	20
Alfred Fitch.....	Dingleton.....	Windsor, Vt.....	8
Albert Weld.....	Maple Cottage.....	Cornish Flat.....	6



LAKE PLEASANT, DEERFIELD.

SUMMER HOTELS AND BOARDING-HOUSES. — *Continued.*

Proprietor or Landlord.	Name of House.	P. O. Address.	No. of Guests.
CORNISH. — <i>Continued.</i>			
S. A. Tracy.....	Maplewood Farm.....	Plainfield.....	10
W. B. Quimby.....	.....	Cornish Flat.....	6
J. W. Fitch.....	.....	Windsor, Vt.....	6
F. L. Johnson.....	.....	Cornish Flat.....	6
Charles H. Deming.....	Sunnyside.....	.....	.....
CROYDON.			
David A. Sargent.....	Croydon House.....	Croydon.....	20
Isaac P. Rawson.....	.....	".....	.....
John Harding.....	.....	.....	.....
DALTON.			
William B. Aldrich.....	River View House.....	Dalton.....	15
DANBURY.			
G. B. Pulsifer.....	Pulsifer House.....	Danbury.....	12
G. H. Wiggin.....	.....	".....	12
J. A. Jackson.....	Jackson House.....	".....	15
G. H. Jackson.....	Woodbine Cottage.....	".....	20
Mrs. J. O. Gale.....	Danbury House.....	".....	20
A. J. Danforth.....	.....	".....	15
E. B. Nichols.....	Long Look Farm.....	".....	30
J. D. Danforth.....	.....	".....	.....
Fred Huntoon.....	Farland Vale House.....	".....	10
Mrs. S. D. Tuck.....	Homestead Farm.....	.....	20
DEERFIELD.			
H. B. Stearns.....	.....	South Deerfield.....	10
G. Page.....	Exchange Hotel.....	Deerfield.....	.....
Walter Scott.....	Pleasant Pond.....	Epsom.....	12
J. D. Cate.....	.....	Deerfield.....	15
Annie M. Chase.....	.....	Deerfield Centre.....	.....
DEERING.			
A. L. Danielson.....	Bellevue Hotel.....	Deering.....	35
Levi W. Goodale.....	Orchard House.....	".....	25
Esther P. Crosby.....	Highland House.....	".....	16
William Forsaith.....	.....	Deering Centre.....	10
Dennis R. Chase.....	Maplewood House.....	East Deering.....	20
William H. Gilmore.....	Riverside.....	".....	16
Mrs. Jesse Gregg.....	Lake View House.....	Deering Centre.....	10
R. E. Otis.....	.....	Hillsborough Bridge.....	.....
DERRY.			
A. T. Willey.....	Bradford Hotel.....	Derry Depot.....	.....
Albert Newell.....	Hildreth Hall.....	Derry.....	40
William O. Noyes.....	Noyes Farm.....	".....	20
Miner G. Frye.....	Frye House.....	Derry Depot.....	.....
George A. Webster.....	Grand View.....	".....	12
Joshua B. Morse.....	Pawtucket Farm.....	Derry.....	.....
M. Cullen.....	Maplewood Farm.....	East Derry.....	10
Walter D. Stevens.....	Stevens Farm.....	".....	.....
George W. Batchelder.....	Batchelder Farm.....	".....	25
Albert A. Davis.....	Davis Farm.....	East Windham.....	.....
Mrs. William Merrifield.....	Buttonwood Farm.....	East Derry.....	6
Mrs. William Reynolds.....	.....	".....	.....
H. J. Bagley.....	Lakeside.....	Derry Depot.....	.....
Joseph Frost.....	Frost Mansion.....	Windham Depot.....	.....
James M. Batchelder.....	Valley House.....	East Derry.....	10
Mrs. John Burbank.....	Thomas House.....	".....	.....
DORCHESTER.			
William Buck.....	Daisy Farm.....	East Canaan.....	12

SUMMER HOTELS AND BOARDING-HOUSES. — *Continued.*

Proprietor or Landlord.	Name of House.	P. O. Address.	No. of Guests.
DUBLIN.			
H. R. Leffingwell.....	Appleton House.....	Dublin	75
Miss B. Esty.....	Parkhurst.....	"	
DUMMER.			
J. H. Chandler.....	.....	Dummer	
Blanchard & Twitchell.....	.....	" .....
DUNBARTON.			
Daniel Jameson.....	Maple House.....	Dunbarton.....	30
Henry P. Kelley.....	Centre View.....	"	10
N. T. Safford.....	.....	" .....
E. P. Marshall.....	.....	" .....
DURHAM.			
J. M. R. Adams.....	Adams House	Newmarket	20
N. A. Pendergast.....	.....	" .....	6
N. G. Wiggin.....	Oak Grove.....	"	12
J. G. Hutchinson.....	.....	" .....
Mrs. Martha D. Young.....	Young Farm.....	"	10
D. T. Woodman.....	.....	" .....
John H. Scott.....	.....	" .....
EAST KINGSTON.			
Ernest G. Carrier.....	.....	East Kingston.....	26
EATON.			
N. G. Palmer.....	Palmer House.....	Eaton Centre.....	32
J. N. Robertson.....	Robertson House.....	"	20
Stephen Littlefield.....	.....	Snowville.....	12
H. H. Robertson.....	Rock Mountain	Eaton Centre.....	25
William N. Snow .....	.....	Snowville.....	
F. M. Hatch.....	.....	" .....	8
C. H. Leavitt.....	.....	" .....
Mrs. E. A. Stanley.....	Riverside House.....	"	8
EFFINGHAM.			
John C. Leavitt.....	Green Mountain House..	Effingham.....	
James H. Smith.....	.....	.....
Shepard F. Demeritt.....	.....	Effingham Falls.....	
Sylvester T. Lougee.....	.....	" .....
Joseph B. Davis.....	.....	" .....
Mary E. Marston.....	.....	" .....
Almon Cross.....	.....	" .....
Charles B. Savage.....	.....	South Effingham.....	
Charles H. Stevens.....	.....	" .....	18
Samuel Clough.....	Glenwood House.....	Centre Effingham.....	
John A. Leavitt.....	.....	.....
James F. Cate.....	Locusty Cottage.....	"	6
Willard L. Meloon.....	.....	Ossipee	
ENFIELD.			
George L. Hart.....	.....	Enfield.....	
Lorenzo Day.....	Day Dawn.....	"	40
William A. Saunders.....	Lake View.....	"	30
John Morse.....	Mont Calm.....	"	40
T. B. Morgan.....	Maple Grove.....	"	12
William W. French.....	Maple Cottage.....	"	12
James Jackman.....	Elm Cottage.....	Enfield Centre.....	20
A. P. Howe.....	Mountain View.....	Lebanon	15
C. H. Webster.....	Webster House.....	Enfield.....	30
F. B. Morse.....	Codman House.....	Enfield Centre.....	40
E. R. Dustin.....	Sunrise House.....	"	12



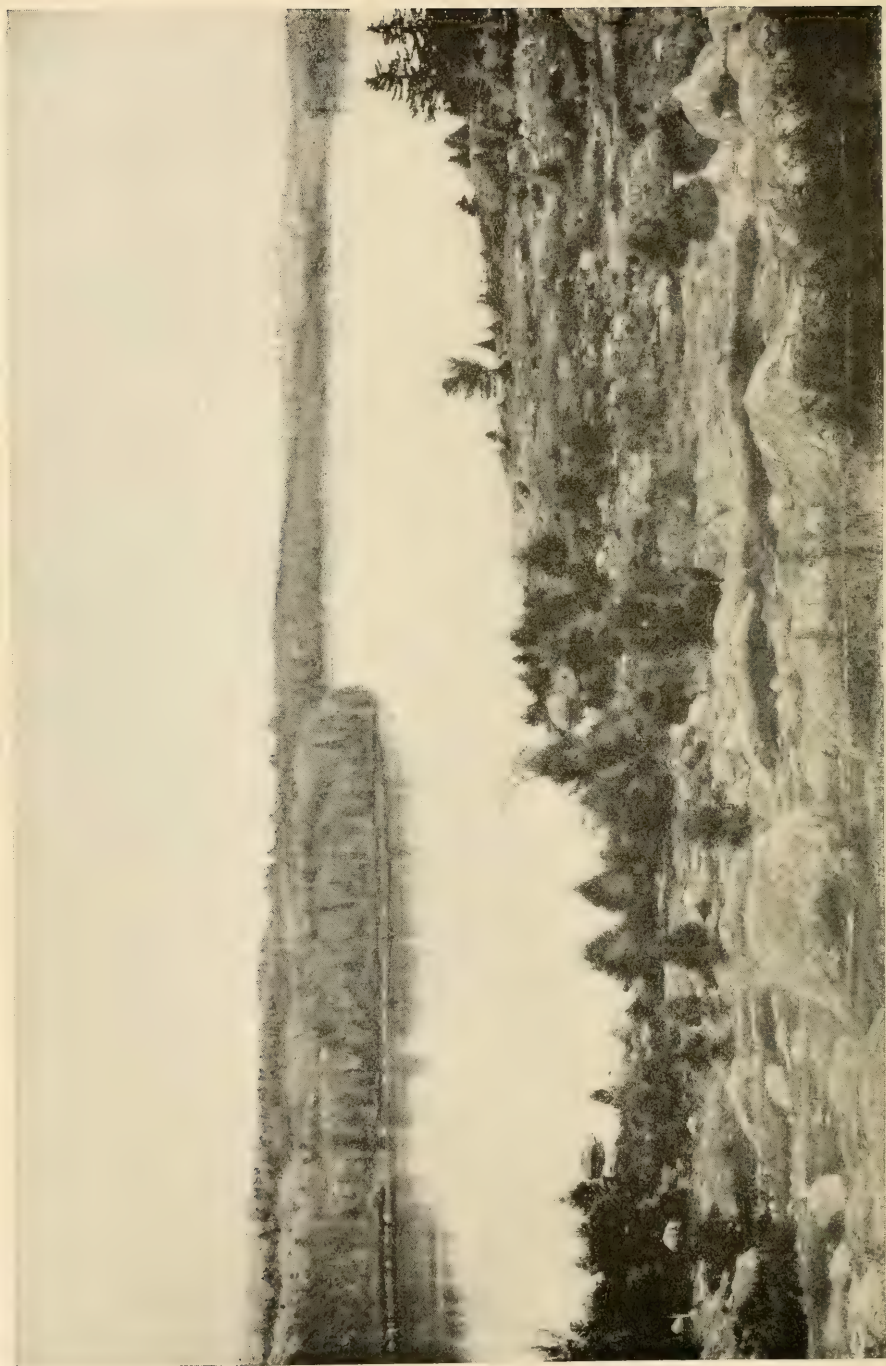
MONADNOCK LAKE, DUBLIN.

SUMMER HOTELS AND BOARDING-HOUSES. — *Continued.*

Proprietor or Landlord.	Name of House.	P. O. Address.	No. of Guests.
EPPING.			
Moses A. Perkins	Prospect House.....	Epping	30
L. D. Manville	Pawtuckaway.....	"	6
G. O. Reynolds	"	"	
Mrs. Ladd	"	"	
Mary Plummer	"	"	
ERROL.			
W. A. Bragg	Umbagog	Errol	50
John Akers	Akers House	"	15
L. H. Grover	Grover House	"	
G. C. Demeritt	Demeritt House	"	
J. W. Akers	Pond Cottage.....	"	15
FARMINGTON.			
E. T. Cotton	Wilson House.....	Farmington	50
William Welch	Central House.....	"	
Frank McAlpine	Strafford House	"	30
Park J. Connelly	Connelly Farm.....	"	25
John S. Roberts	Cloverdale Farm	"	30
FRANCESTOWN.			
A. H. Spalding	Francestown Hotel	Francestown	30
F. A. Prescott	Mountain Farm	"	20
N. H. Woods	"	"	
Mrs. P. L. Clarke	"	"	12
FRANKLIN.			
Mrs. O. B. Davis	Webster House	Franklin	
A. K. Moore	Franklin House	"	15
James Morse	Morse Cottage	"	8
Hiram Colby	"	"	
P. L. Kennedy	"	Franklin Falls	
Robert Young	"	"	
Nathaniel Colby	"	"	
Miss Minnie Cram	"	Franklin	
Albert M. Osgood	"	Franklin Falls	
FITZWILLIAM.			
O. K. Wheelock	Cheshire House	Fitzwilliam	150
O. K. Wheelock	Fitzwilliam Hotel	"	150
N. W. Cahill	"	"	
FRANCONIA.			
Taft & Greenleaf	Profile House	Profile House	500
Priest & Dudley	Forest Hill House	Franconia	150
Richardson Brothers	Mount Lafayette	"	75
M. B. Wheelock	Hawthorne	"	60
Alvin Granis	Mount Jackson	"	30
John M. Bickford	Maple Farm	"	12
W. H. Weisman	White Mountain Studio	"	
James Quimby	"	"	20
Henry Spooner	"	"	25
Mrs. Noah Wells	Grand View Cottage	"	14
Daniel Whitney	"	"	20
Edwin Nelson	Brooks Farm	"	25
Mrs. H. Knight	Mountain View	"	30
FREMONT.			
Warren True	True House	Fremont	
Andrew Brown	"	"	
Joseph B. Sanborn	"	"	10

SUMMER HOTELS AND BOARDING-HOUSES.—*Continued.*

Proprietor or Landlord.	Name of House.	P. O. Address.	No. of Guests.
FREEDOM.			
William Furbush.....	Loon Lake.....	Freedom.....	16
Mrs. R. Towle.....	.....	".....	.....
S. W. Fowler.....	Wayside Farm.....	".....	20
Mrs. Marcia Danforth.....	.....	".....	.....
Fred Huntress.....	Prospect House.....	".....	10
C. P. Danforth.....	.....	".....	.....
Mrs. Joseph Towle.....	.....	".....	.....
Hittie Andrews.....	.....	".....	.....
Mrs. C. P. Harmon.....	.....	".....	.....
Frank Tyler.....	Elm Farm.....	".....	10
O. E. Drake.....	.....	".....	.....
GILMANTON.			
John L. Stoddard.....	Mountain View.....	Gilmanton.....	.....
A. R. Wight.....	.....	".....	30
R. A. Knowles.....	.....	".....	20
Mrs. Eunice Holbrook.....	.....	".....	.....
L. H. Mudgett.....	.....	".....	10
J. H. Drew.....	Mount Oakland House.....	".....	10
Mrs. Emma Demett.....	.....	.....	.....
Stephen W. Sargent.....	Hill Rest.....	Gilmanton Iron Wks.....	20
E. A. Paige.....	Crystal Lake.....	.....	20
Mrs. Charles A. Hatch.....	Rock View House.....	Gilmanton.....	18
Lafayette Canney.....	Hillside Farm.....	".....	15
Charles W. Munsey.....	.....	".....	.....
Mrs. Mary A. Nutter.....	.....	".....	.....
GILFORD.			
Hunt Brothers.....	Winnette.....	Lakeport.....	25
J. H. Davis.....	Lily Pond.....	".....	25
L. M. James.....	.....	Laconia.....	15
E. M. Brown.....	Pleasant Valley.....	Lakeport.....	10
Ellen E. S. Wadleigh.....	.....	Weirs.....	15
F. G. Smith.....	Prospect House.....	Laconia.....	10
Henri Blaisdell.....	Lake Shore Park Inn.....	Lakeport.....	.....
Palmer W. Merrill.....	.....	".....	.....
A. O. Sanborn.....	.....	".....	.....
GOFFSTOWN.			
S. D. Johnson.....	Shirley Hill House.....	West Manchester.....	70
H. S. Scribner.....	Scribner House.....	Goffstown Centre.....	.....
George Brothers.....	Yacum.....	".....	60
Mr. White.....	Central House.....	Goffstown.....	.....
H. L. Kimball.....	Maplewood House.....	Manchester.....	25
Daniel Shirley.....	Shirley Hill Farm.....	West Manchester.....	15
Daniel Davis.....	.....	Goffstown.....	.....
Horace Richards.....	.....	".....	.....
GORHAM.			
G. D. Stratton.....	Alpine.....	Gorham.....	.....
L. L. Jackman.....	Eagle Hotel.....	".....	40
Mrs. F. H. Evans.....	Willis Cottage.....	".....	35
Mrs. E. C. Spafford.....	Riverside.....	".....	.....
Ann Lary.....	Lary House.....	".....	.....
GOSHEN.			
Mrs. G. H. Brown.....	.....	Mill Village.....	.....
H. S. George.....	.....	".....	.....
Edwin Pettis.....	.....	".....	.....
George Davis.....	.....	".....	.....
Elmer Jacobs.....	.....	".....	.....
Joel S. Maxfield.....	.....	Goshen.....	6



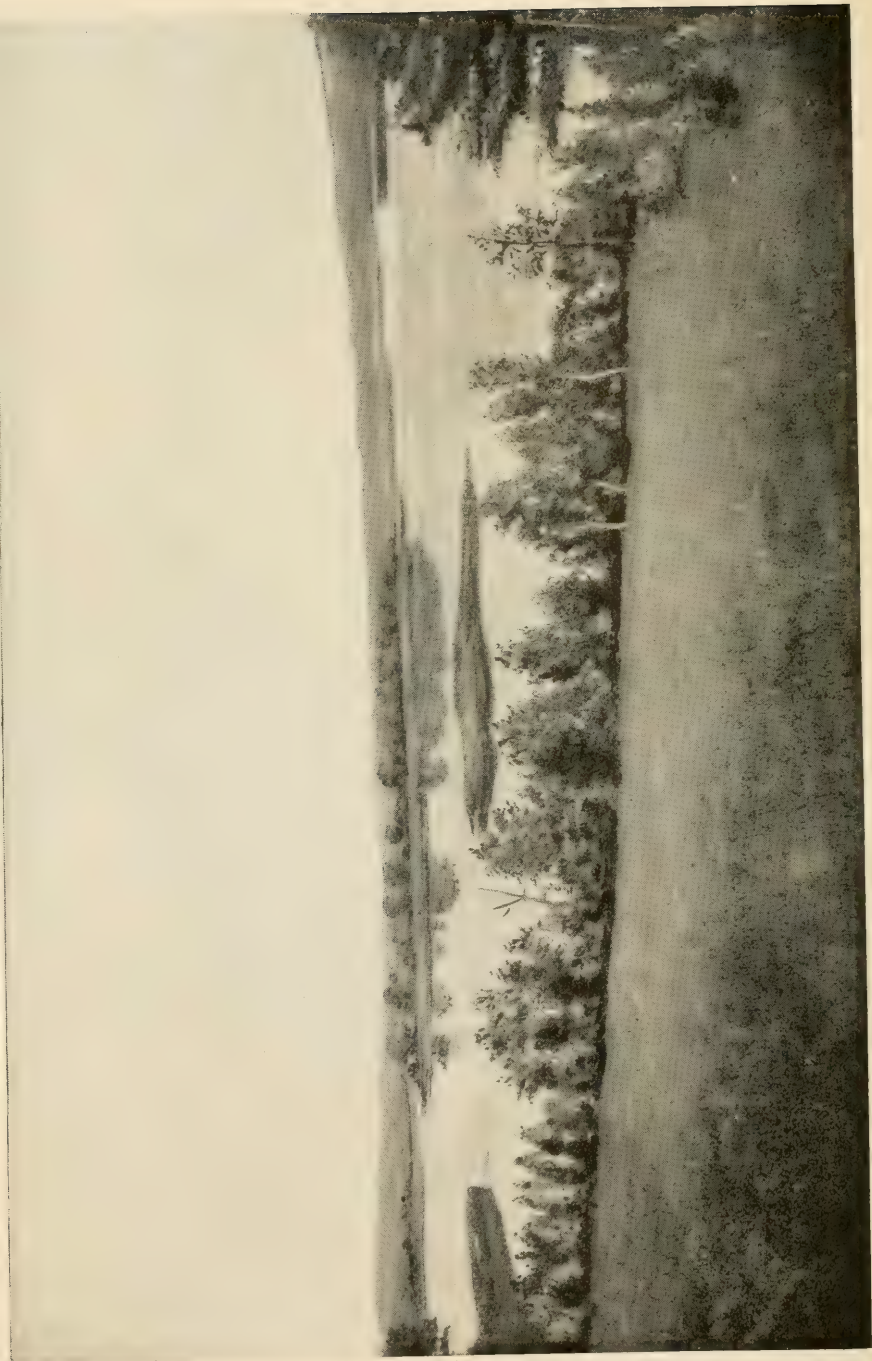
LOON LAKE. HILLSBOROUGH.

SUMMER HOTELS AND BOARDING-HOUSES. — *Continued.*

Proprietor or Landlord.	Name of House.	P. O. Address.	No. of Guests.
GREENFIELD.			
John D. Emmon .....	.....	Greenfield.....	.....
GREENLAND.			
Dudley C. Littlefield..	Mansion House.....	So. Newmarket Jet..	14
Philip B. Holmes.....	.....	Greenland.....	.....
GREENVILLE.			
W. A. Robinson	Columbian.....	Greenville.....	40
E. B. Barrett.....	Barrett House.....	".....	12
HAMPSTEAD.			
A. P. Emerson.....	Hawthorn Lodge.....	Hampstead.....	2
Hannah B. Griffin.....	.....	".....	.....
W. H. Cobb.....	Mapleton House.....	".....	8
Amasa Hunt.....	Maple Cottage.....	".....	12
Frank Bigelow.....	.....	".....	12
John W. Marble.....	Valley Farm.....	".....	20
HAMPTON.			
S. H. Dumas.....	Boar's Head.....	Hampton.....	200
S. H. Dumas.....	Rockingham House.....	".....	60
Leavitt Brothers.....	Hampton Beach House.....	".....	.....
Otis H. Whittier.....	Union House.....	".....	75
John G. Cutler.....	Sea View.....	".....	50
Curtis D. DeLancey.....	DeLancey House.....	".....	.....
Lewis P. Nudd.....	Eagle House.....	".....	60
Joseph J. Mace.....	.....	".....	25
Josiah C. Palmer.....	.....	".....	.....
Thomas L. Perkins.....	.....	".....	12
Elias S. Perkins.....	.....	".....	10
Oliver Nudd.....	.....	".....	.....
Mrs. Simon Leavitt.....	Elm Cottage.....	".....	25
Austin Weare.....	Lancey.....	Seabrook.....	.....
Frank Beckman.....	Beckman House.....	Hampton.....	.....
Mrs. J. J. Leavitt.....	.....	".....	.....
Jacob B. Leavitt.....	.....	".....	.....
Frank Nudd.....	Nudd House.....	".....	40
HAMPTON FALLS.			
John A. Brown.....	.....	Hampton Falls.....	10
Mrs. J. A. Dow.....	.....	".....	8
Mary E. Elkins.....	.....	".....	.....
HANCOCK.			
A. S. Wood.....	.....	Hancock.....	.....
Helen Fowle.....	.....	".....	.....
J. F. Eaton.....	Hancock House.....	".....	40
John Welch.....	.....	".....	.....
A. B. Stone.....	Maple Dale Farm.....	".....	20
A. G. Foster.....	.....	".....	.....
Lydia Osgood.....	.....	".....	10
John Lindsay.....	Lindsey Farm.....	".....	20
HANOVER.			
Dartmouth College.....	Wheelock House.....	Hanover.....	150
George W. Kibling.....	Dartmouth House.....	".....	100
HARRISVILLE.			
James A. Mason.....	Grand View.....	Chesham.....	15
L. L. Howe.....	.....	".....	.....
M. M. Mason.....	.....	".....	12
Aaron Willard.....	.....	".....	.....
Solon Willard.....	.....	".....	.....

SUMMER HOTELS AND BOARDING-HOUSES.—*Continued.*

Proprietor or Landlord.	Name of House.	P. O. Address.	No. of Guests.
HART'S LOCATION.			
L. F. Atwood.....	Willey House	Crawford House.....	60
HEBRON.			
E. Barnard	Lakeside.....	East Hebron.....	24
John W. Sanborn	Grove Hill Farm.....	"	25
Fred Clement	Union House	Hebron	"
Cyrus Moore.....	Central House.....	"	"
George S. Smith.....	Hillside Farm.....	East Hebron.....	25
Hiram M. Worthley	Prospect House.....	Bridgewater.....	15
John E. Hartford.....	Maplewood Farm.....	East Hebron.....	12
HENNIKER.			
G. W. Miller.....	Hotel Henniker.....	Henniker.....	30
Charles Ray.....	Lake View Farm.....	"	12
J. B. Brown.....	Pleasant Lake Farm.....	"	16
Henry F. Huntington.....	Mountain View	"	12
D. W. Cogswell.....	"	"	12
J. A. Newton.....	"	"	"
Warren Felch	"	"	"
Mrs. C. R. Bacon.....	Fir Tree Cottage	"	8
Fred N. Webster.....	"	West Henniker.....	"
W. D. Davis.....	Davis House	Henniker.....	40
J. W. Emery.....	"	"	15
F. T. Huntington	Maplewood	"	6
Frank E. Colby.....	Oak Cottage	"	8
C. C. French.....	"	"	"
George A. Gordon.....	"	"	"
C. H. Courser.....	"	"	"
A. J. Parker.....	Parker	"	10
Wesley Felch	"	"	"
J. G. Rice.....	"	"	12
George H. Savage.....	"	"	"
HILL.			
V. S. Straw.....	Glendale	Hill	30
L. T. Dearborn.....	"	"	10
H. L. Brown.....	"	"	12
D. B. Dickerson.....	"	Danbury	10
F. W. Foster.....	Riverside Farm	"	8
C. M. Cilley.....	"	Hill	"
J. E. Newton.....	"	"	"
George H. Cilley.....	Long Hill Farm.....	"	12
C. A. Blake.....	"	"	"
W. H. Morrill.....	"	"	"
HILLSBOROUGH.			
Peter H. Rumrill.....	St. Peter.....	Hillsboro' Bridge.....	25
William E. Gay.....	Maplewood Farm.....	"	20
William Whittle.....	Maplewood	"	10
Danforth & Gammett.....	Hillside Cottage.....	Hillsboro' Centre.....	8
James M. Wilkins.....	Grove Cottage	"	10
J. B. Whitemore.....	Valley Hotel	Hillsboro' Bridge.....	75
E. C. Hoyt & Sons.....	Lake View	Hillsboro' Centre.....	100
W. E. Proctor	Proctor House.....	Hillsboro' Bridge.....	"
Susan Gay.....	Ehn Cottage.....	Hillsboro' Centre.....	10
Frank D. Gay	Echo Cottage.....	"	20
HINSDALE.			
Ferren & Holland	Ashmelot	Hinsdale.....	50
I. K. Barcom.....	Bellevue.....	"	"
Mrs. Janet Barcom.....	Hillside Farm	"	16
Waldo Royvillard	Mountain-Side Farm	"	25
Wallace Holton	Terrace Hall.....	"	"



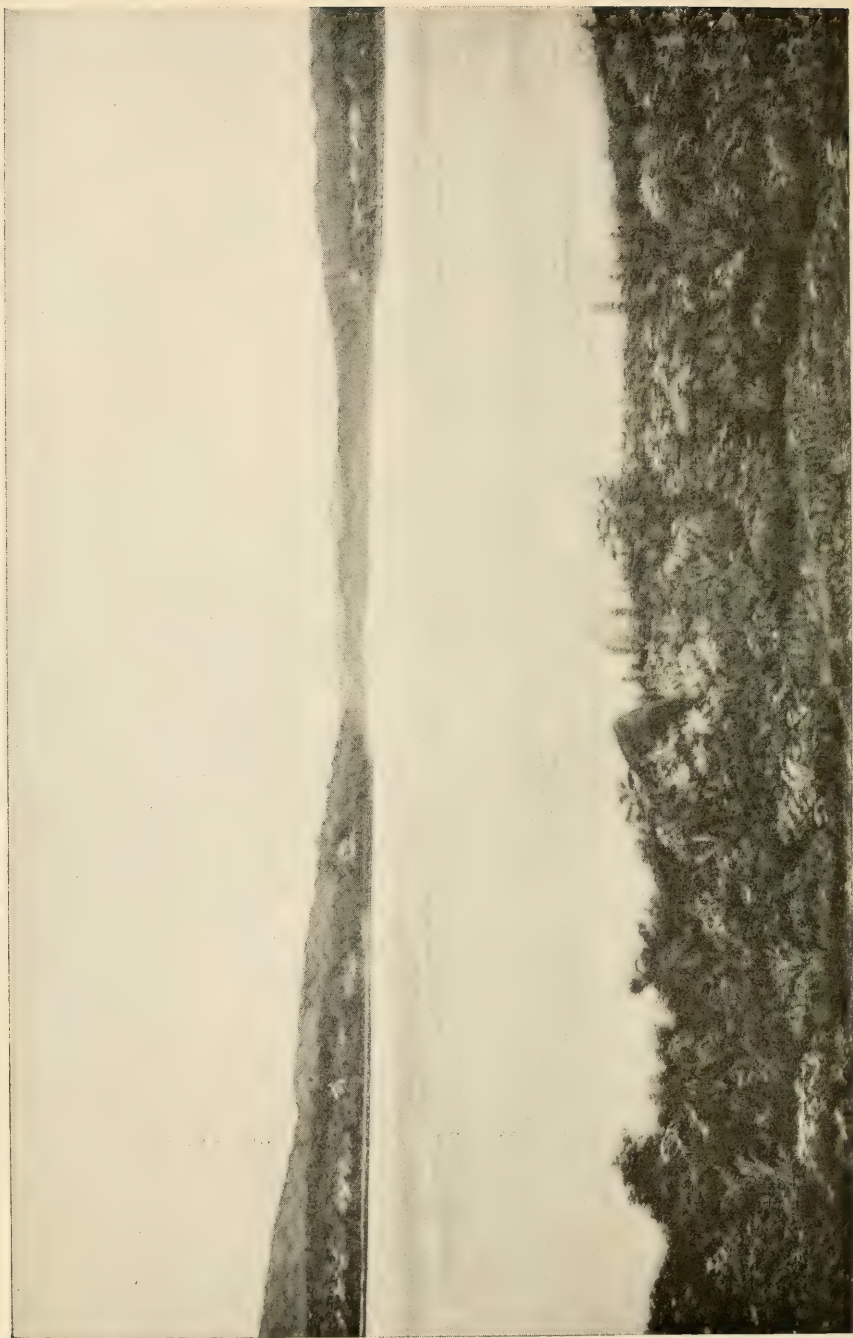
GREAT BAY, PORTSMOUTH.

SUMMER HOTELS AND BOARDING-HOUSES.—*Continued.*

Proprietor or Landlord.	Name of House.	P. O. Address.	No. of Guests.
HOLDERNESS.			
Leon H. Cilley	Asquam.....	Holderness	130
Isaac Smith	Squam Mountain	"	30
C. L. True	Lake Farm	"	30
E. B. Balch	Camp Chocorua	"	
Winthrop Talbot	Camp Asquam	"	
R. B. Willoughby	Willoughby	"	
B. F. Jewell	Mount Livermore	"	100
H. S. Buzzell	White Oak	"	15
R. B. Piper	Innisville	"	
Newman Crowell	Cedar Cottage	"	14
Robert Curry	Lakeside Cottage	"	10
E. C. Bennett	Mount Morgan	"	35
Jason Sanborn		Plymouth	20
B. T. Mills	Seven Pines	"	50
S. J. Sleeper	Asquam View	Holderness	12
HOLLIS.			
S. M. Spaulding		Hollis	
Mrs. Warner Read		"	
William P. Cutter		"	
Maria Austin		"	
Edward P. Brooks		"	15
Levi Abbott		"	
John Stark		"	
Mrs. Mary A. Lovejoy	Silver Lake House	"	
Mrs. A. A. Paull		"	
Mrs. A. P. Gale		"	
HOOKSETT.			
Horace Bonney	Ayer House	Hooksett	
Horace H. Parker		"	
Mrs. Hannah Farmer		"	
Henry C. Carbee		"	
John I. Otterson	Otterson House	"	14
Rufus Fuller		"	
HOPKINTON.			
Frank A. Hale	Perkins Inn	Hopkinton	100
H. Sumner Chase	Highland Farm	Contoocook	50
W. L. Moulton	Pleasant View Farm	East Weare	20
George Symonds		Hopkinton	15
Reuben A. Gerry	Gerry House	Contoocook	20
William F. Dodge	Sargent House	Hopkinton	16
Gay Montgomery		"	
Lucy A. White		"	
HUDSON.			
S. A. Greeley		Hudson	
Mrs. Peter Poff		"	
Clifton M. Hills		"	
JACKSON.			
M. C. Wentworth	Wentworth Hall	Jackson	150
Trickey Brothers	Jackson Falls	"	40
W. A. Meserve	Iron Mountain House	"	100
C. W. Gray	Gray's Inn	"	125
S. M. Thompson	Glen Ellis	"	125
C. E. Gale	Eagle Mountain	"	90
J. E. Meserve	Hawthorne	"	40
Frank Wilson	Wilson Cottage	"	35
I. H. Harriman	Spruce Cottage	"	12
J. M. Perkins	Carter's Notch	"	28
W. G. Gray	Gray's Inn	"	

SUMMER HOTELS AND BOARDING-HOUSES.—*Continued.*

Proprietor or Landlord.	Name of House.	P. O. Address.	No. of Guests.
JACKSON. — <i>Continued.</i>			
B. M. Fernald.....	Glendon Cottage.....	Jackson.....	22
C. B. Perkins.....	Perkins Cottage.....	".....	"
W. E. Elkins.....	Cliff Cottage.....	".....	14
C. S. Meserve.....	Mapleton Cottage.....	".....	11
Ephraim Garland.....	Dundee Cottage.....	Lower Bartlett.....	18
JAFFREY.			
J. B. Proctor.....	Proctor House.....	Jaffrey.....	25
Jonas Cutter.....	Cutter House.....	".....	70
M. E. Cutter.....	Central House.....	".....	"
Benjamin Pierce.....	Granite State House.....	East Jaffrey.....	"
J. H. Pool.....	The Ark.....	Jaffrey.....	40
E. P. & E. C. Shattuck.....	Shattuck House.....	".....	50
Mrs. A. D. Pierce.....	".....	".....	20
F. J. Lawrence.....	".....	".....	12
Alfred Sawyer & Son.....	Maple Retreat.....	East Jaffrey.....	15
JEFFERSON.			
Plummer & Porter.....	Waumbek.....	Jefferson.....	250
E. E. Bedell.....	Jefferson Hill House.....	".....	100
P. C. Plaisted.....	Plaisted House.....	".....	"
John W. Crawshaw.....	Mount Adams.....	Jefferson Highlands.....	55
E. A. Crawford & Son.....	Crawford House.....	".....	45
J. L. Pottle.....	Highland House.....	".....	50
G. W. Crawford & Son.....	Pliny Range.....	".....	45
T. M. Bradley.....	Grand View.....	Jefferson.....	40
Frank W. Collins.....	Maple House.....	".....	"
Plummer & Porter.....	Star King.....	".....	"
W. H. Crawford.....	Cold Spring.....	".....	30
Hight Brothers.....	Union House.....	".....	30
N. M. Davenport.....	Hillside House.....	".....	23
John Palmer.....	Cloverdale.....	".....	"
Mrs. C. A. Woodward.....	Woodward Cottage.....	".....	"
KENSINGTON.			
Mrs. J. P. Lamprey.....	Pine Grove.....	Kensington.....	12
Mrs. S. C. Chase.....	".....	".....	10
W. N. Shaw.....	Orchard Hill.....	Exeter.....	6
Mrs. D. D. Prescott.....	".....	".....	"
Clinton Gove.....	".....	".....	"
KINGSTON.			
G. A. Varrell.....	Kingston House.....	Kingston.....	20
Mrs. S. N. Gray.....	Great Hill Cottage.....	Exeter.....	12
Mrs. E. M. Frost.....	Frost House.....	Kingston.....	"
Henry Goodwin.....	".....	".....	10
O. H. Key.....	".....	".....	"
John T. Hilliard.....	".....	".....	"
Samuel W. Stevens.....	".....	Exeter.....	6
R. Benson Bartlett.....	".....	".....	15
John A. Furber.....	".....	".....	"
Charles Elkins.....	Birch Grove Farm.....	".....	10
Mrs. F. M. Cummings.....	Maplewood Farm.....	".....	20
LACONIA.			
G. W. Weeks.....	Lakeside House.....	The Weirs.....	150
C. E. Sleeper.....	Sanborn's House.....	".....	100
J. W. Williams.....	Winnecoette.....	".....	75
Dennett & Brown.....	Aquedoktan.....	".....	40
Mrs. S. C. Moore.....	Endicott House.....	".....	30
D. B. Story.....	Story's Hotel.....	".....	50
Mrs. G. H. Mitchell.....	Eagle Cottage.....	".....	20
John Spalding.....	Good Luck House.....	".....	20



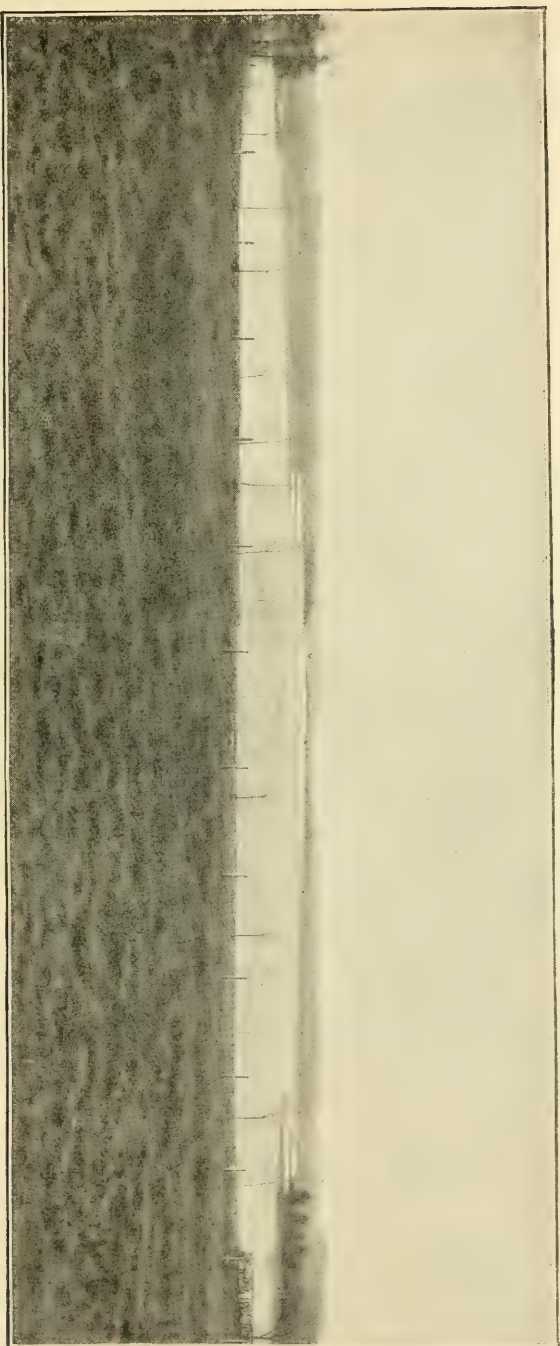
LOVELL LAKE, WAKEFIELD.

SUMMER HOTELS AND BOARDING-HOUSES. — *Continued.*

Proprietor or Landlord.	Name of House.	P. O. Address.	No. of Guests.
LACONIA. — <i>Continued.</i>			
Mrs. E. L. True.....	Maple Cottage	The Weirs.....	25
Mrs. L. W. Lovett.....	Lovett Cottage	" "	15
Mrs. Moses Gordon	"	" "	15
Mrs. J. E. Avery	"	"	20
Fred B. Smith.....	Eagle Hotel	Laconia.....	50
L. H. French.....	Wonolancet Hotel.....	"	60
M. H. Fernald.....	Kirtland House	"	40
Mrs. A. A. Weeks.....	Vue de l'eau.....	"	100
E. A. Chase.....	Round Bay Farm	"	16
Seth Flanders.....	Round Bay Farm	"	10
LANCASTER.			
Ned Linsley & Son.....	Lancaster House.....	Lancaster	100
W. L. Rowell.....	Hillside Cottage	"	
Chester A. Ball.....	Williams House.....	"	
LANDAFF.			
J. E. Hall.....	"	Landaff.....	
O. D. Eastman.....	"	"	15
J. F. Gale.....	"	"	
Mrs. C. C. Temple.....	"	Lisbon	
LANGDON.			
George R. Holden.....	Elm Farm.....	Langdon.....	12
Henry M. Elwell.....	"	"	
LEBANON.			
Sidney Roberts.....	Chiron Spring.....	Lebanon	40
Osgood T. Purmont.....	Sunside House.....	"	
LEE.			
Howard M. Glidden.....	"	Lee.....	20
Mrs. Robert Dalton.....	"	"	10
Charles Allen.....	"	"	
LEMPSTER.			
A. R. Hood.....	Granite House	Lempster	18
Fred Barton.....	Lempster House	"	35
LINCOLN.			
Elliott Brothers.....	Flume House.....	Lincoln	
LISBON.			
E. H. Goodnow & J. W. Prackett, Jr.....	Goodnow House.....	Franconia	225
Bowles & Hoskins.....	Sunset Hill House.....	Sugar Hill	300
H. Noyes & Son.....	Lookoff Hotel.....	"	200
W. B. Phillips.....	Phillips House	Franconia	75
Wells & Woolson.....	Breezy Hill House.....	Lisbon	160
Lyman Aldrich.....	Maple Cottage	Sugar Hill	25
George Aldrich.....	Grand View.....	"	
Nathan Whipple.....	Cedar Cottage.....	"	
Leonard Smith.....	Hillside Farm.....	"	20
Jason Comey.....	Echo Farm.....	Franconia	20
Edwin Knight.....	Hillside House.....	Lisbon	30
E. W. Bartlett.....	Elm House	"	25
Will Bishop.....	Bishop Farm	"	25
Ira Jesseman.....	Jesseman Farm.....	"	15
Foster Aldrich.....	Pearl Lake	"	25
Simon Bowles.....	Elm Farm.....	Sugar Hill	25
S. H. Brigham.....	Brigham House.....	Lisbon	50
Moses Northey.....	Northey House.....	"	20
Olivia Young.....	Sugar Hill.....	Sugar Hill	
Darius Jesseman.....	Jesseman Farm.....	"	30

SUMMER HOTELS AND BOARDING-HOUSES. — *Continued.*

Proprietor or Landlord.	Name of House.	P. O. Address.	No. of Guests.
LITCHFIELD.			
Charles H. McQuestion..	Island Farm.....	Reed's Ferry.....	.....
Thomas McQuestion.....	Highland Spring.....	Litchfield.....	.....
Robert McQuestion.....	Good Samaritan.....	Hudson.....	.....
Jacob Whittemore.....	Lilac Cottage.....	Litchfield.....	.....
LITTLETON.			
Farr & Jarvis.....	Oak Hill House.....	Littleton.....	150
A. W. Weeks.....	Cheswick Inn.....	".....	100
E. O. & Gilman Wheeler	Wheeler Hill House.....	".....	35
Aaron D. Fisher.....	Sunnyside.....	".....	14
E. D. Sawyer.....	Mountain House.....	".....	50
M. F. Young & Co.....	The Maples.....	".....	50
F. R. Glover.....	Elm Cottage.....	".....	20
Noah Farr.....	Meadow Farm.....	".....	16
William Harriman.....	Hill Cottage.....	".....	15
George Abbott.....	".....	".....	12
LONDONDERRY.			
William G. Cross.....	Woodbine Cottage.....	Londonderry.....	10
Charles S. Pillsbury.....	".....	".....	8
John H. Burbank.....	".....	".....	20
B. F. Whorf.....	Highland View.....	".....	10
C. B. Knowles.....	".....	".....	20
S. P. Robie.....	Lake View.....	".....	12
John A. Moore.....	".....	".....	.....
G. F. McGregor.....	".....	".....	.....
R. Flanders.....	".....	".....	10
Thomas T. Moore.....	Locust Grove Farm.....	Derry Depot.....	12
Mrs. I. G. Adams.....	Breezy Hill Farm.....	Londonderry.....	15
LOUDON.			
J. J. A. Hutchins.....	".....	Loudon.....	.....
H. J. Osgood.....	".....	".....	12
Mrs. J. L. Perkins.....	Perkins House.....	".....	16
John B. Perkins.....	".....	".....	20
David S. Clough.....	".....	".....	20
Mrs. D. W. Whittemore..	Hillside House.....	".....	.....
Josiah Leavitt.....	Sunset Lodge, Corn Hill.	".....	25
H. Alvin Beck.....	Wild View.....	".....	20
Doddridge Wheeler.....	".....	".....	.....
Amos Currier.....	Forest Home.....	".....	15
D. P. Wheeler.....	Hillside Farm.....	".....	20
Davis S. Clough.....	".....	".....	.....
A. H. Clough.....	".....	".....	15
John M. Ladd.....	".....	".....	20
Charles E. Sanborn.....	".....	".....	.....
J. A. Clough.....	".....	".....	.....
Levi Pearl.....	".....	".....	.....
Amos Peaslee.....	".....	".....	.....
J. L. Buswell.....	".....	".....	20
J. P. Wheeler.....	".....	".....	.....
W. H. Sanborn.....	".....	".....	25
A. M. Osgood.....	".....	".....	.....
John R. Osbourne.....	Prospect House.....	".....	15
LYMAN.			
Miner & De Huff.....	Highland Home.....	Lyman.....	10
H. & W. L. Chase.....	".....	".....	15
LYME.			
Kate G. Perkins.....	Union House.....	Lyme.....	10
George R. Amsden.....	".....	".....	.....
H. Chase.....	".....	".....	15
J. W. Minkler.....	Minkler Hotel.....	".....	50



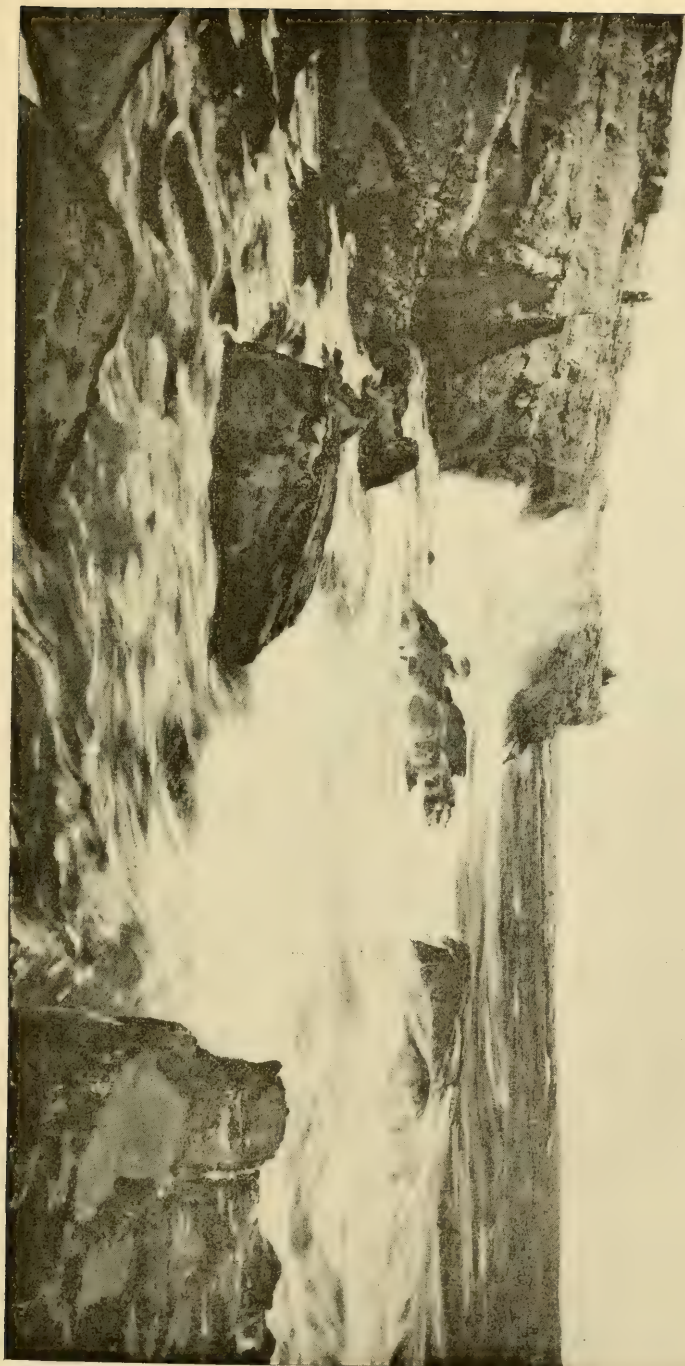
CANOBIE LAKE, WINDHAM.

SUMMER HOTELS AND BOARDING-HOUSES.—*Continued.*

Proprietor or Landlord.	Name of House.	P. O. Address.	No. of Guests.
<i>LYME.—Continued.</i>			
H. F. Carr		Lyme	6
H. H. Holt		"	6
<i>LYNDEBOROUGH.</i>			
Levi P. Hadley	Pine Grove	Lyndeborough	
E. P. Duncklee	Mountain Side	"	80
Dana B. Sargent	"	"	20
D. P. Hartshorn	Hillside Home	"	20
J. A. Woodward	"	"	15
Rodney Perham	"	East Wilton	
Mrs. Olive Watkins	Poplar House	North Lyndeborough	30
H. H. Joslin	"	"	
Mrs. F. H. Curtis	"	East Wilton	13
Mrs. Mary Swazey	"	South Lyndeborough	
Charles Butler	"	"	
<i>MADISON.</i>			
David Knowles	Lake View	Silver Lake	33
H. C. Colby	Jackson House	Madison	30
Mrs. Arvilla R. Forrest	Silver Lake House	Silver Lake	25
Robert H. Chick	Maple House	Madison	30
Nathaniel Churchill	Churchill House	"	16
<i>MARLOW.</i>			
George A. Petts	Forest House	Marlow	
<i>MEREDITH.</i>			
O. N. Roberts	Grove House	Meredith	
H. W. Lincoln	Prospect House	"	50
T. Gray	Elm House	"	40
W. H. Keyser	Mountain View	"	30
P. & E. A. Page	Bay View	"	20
D. L. Alexander	Maplewood House	"	12
M. C. Pease	Highland House	"	
A. J. Watson	Lake House	"	20
W. E. S. Foss	Waukawan	"	40
T. Ham	"	"	
J. Mudgett	"	"	10
W. B. Smith	"	North Sanbornton	20
N. B. Plumer	Granite Ledge Cottage	Meredith Centre	8
Alvah Smith	"	"	10
W. W. Ballard	"	"	25
<i>MERRIMACK.</i>			
George F. Spalding	"	Merrimack	30
Frank Deering	Reed's Ferry House	Reed's Ferry	35
Mrs. D. S. Beard	Althea Cottage	"	10
Mrs. Wingate M'Question	"	Merrimack	
E. P. Giddings	"	Thornton's Ferry	
<i>MIDDLETON.</i>			
Albert S. Baker	Hillside Farm	Wakefield	12
<i>MILFORD.</i>			
J. H. Plummer	Ponemah	Amherst Station	100
H. D. Epps	Endicott	Milford	30
E. P. Hutchinson	Broad View	Wilton	15
E. R. Cutts	"	Milford	
John Horton	Elm Farm	"	10
<i>MILTON.</i>			
Harriet Edgerley	Phenix	Milton	20
Horace Drew	Drew Hotel	"	80

SUMMER HOTELS AND BOARDING-HOUSES.—*Continued.*

Proprietor or Landlord.	Name of House.	P. O. Address.	No. of Guests.
MILTON.—Continued.			
Crosby H. Prescott.....	Hotel Prescott.....	Milton.....	.....
John E. Hayes.....	.....	".....	.....
Mrs. Abbie D. Butler.....	.....	".....	15
Samuel W. Wallingford.....	.....	".....	.....
Benjamin Hoyle.....	Centennial House.....	".....	.....
Daniel Philbrick.....	.....	Milton Mills.....	.....
John W. Hanson.....	.....	".....	.....
MONT VERNON.			
G. E. Baker.....	Bellevue.....	Mont Vernon.....	60
M. J. Sherman.....	Mont Vernon Hotel.....	".....	250
Clark Campbell.....	Prospect House.....	".....	50
W. H. Conant.....	Conant Hall.....	".....	50
Miss Hattie Dean.....	Deanery.....	".....	30
Ira Hill.....	Hillsborough House.....	".....	40
W. S. A. Starrett.....	Home Cottage.....	".....	40
W. H. Marvell.....	Village Farm.....	".....	15
Mrs. J. A. Holt.....	.....	".....	10
Mrs. S. C. Clement.....	.....	".....	10
Henry T. Dodge.....	Sunnyside Farm.....	".....	15
Charles F. Stinson.....	Highland Farm.....	".....	25
Thomas Sargent.....	Casars Brook Farm.....	".....	16
Daniel H. Smith.....	Pine Grove Farm.....	".....	25
MOULTONBOROUGH.			
George K. Brown.....	Long Island Hotel.....	Long Island.....	40
A. M. Blake.....	Island Home.....	".....	50
J. C. Pitman.....	Elmwood.....	Moultonborough.....	15
Roland H. Green.....	Cambridge.....	".....	.....
Mrs. Frank Green.....	Red Hill.....	".....	.....
J. W. Day.....	Lake View.....	Lake View.....	15
James M. Smith.....	Moultonborough.....	Moultonborough.....	25
A. P. Jaclard.....	Union.....	".....	25
Mrs. B. McDonald.....	Spring Home.....	".....	20
Eben Moulton.....	.....	Centre Harbor.....	.....
Mrs. Jennie Graves.....	.....	".....	.....
Charles Greene.....	.....	".....	.....
Jim Moulton.....	.....	".....	.....
Alvin Moulton.....	.....	".....	.....
Mrs. George Gilman.....	Sunset Cottage.....	Melvin Village.....	16
Mrs. C. A. Moulton.....	.....	Moultonborough.....	.....
Aaron Langdon.....	.....	".....	.....
Albert S. Freese.....	.....	Centre Harbor.....	.....
Mrs. John Beane.....	.....	".....	.....
Daniel Goodwin.....	Bason Hill Farm.....	".....	15
NELSON.			
Orson Tolman.....	Eagle Lake Cottage.....	Nelson.....	12
Frank Hardy.....	.....	".....	.....
John Lane.....	.....	Munsonville.....	.....
Frank P. Nelson.....	.....	".....	.....
Sidney A. Greene.....	.....	".....	.....
Mrs. Mark M. Bailey.....	Brookside.....	Nelson.....	10
Mrs. Calvin Fletcher.....	.....	".....	.....
NEW BOSTON.			
S. L. Marden.....	Summit House.....	New Boston.....	75
Mrs. George Greenwood.....	Greenwood House.....	".....	25
C. A. Trow.....	Young's House.....	".....	.....
Mrs. S. D. Atwood.....	Prospect Cottage.....	".....	20
Richard Patten.....	Highland Farm.....	".....	30
James Warren.....	Maple Ridge.....	".....	25
Almus Warren.....	Wilson Hill.....	".....	25



SUMMER HOTELS AND BOARDING-HOUSES. — *Continued.*

Proprietor or Landlord.	Name of House.	P. O. Address.	No. of Guests.
NEW BOSTON. — <i>Cont'd.</i>			
John Kidder.....	.....	New Boston.....	.....
Mrs. S. T. Scofield.....	.....	" ".....	12
C. F. Dodge.....	.....	" ".....	30
George A. Prince.....	Hillside Farm.....	" ".....	20
G. A. Hill.....	.....	" ".....	.....
Mrs. Frank Read.....	Pleasant View Farm.....	" ".....	.....
NEWCASTLE.			
Frank Jones.....	Wentworth.....	Portsmouth.....	500
Miss Louise White.....	.....	Newcastle.....	14
Thomas Rand.....	Rand's Cottage.....	" ".....	15
C. E. Campbell.....	.....	" ".....	.....
Mrs. Sarah Emerson.....	.....	" ".....	.....
Mrs. Addie Frost.....	.....	" ".....	.....
Thomas Haywood.....	.....	" ".....	.....
John Albe.....	.....	" ".....	.....
George A. Bartlett.....	.....	Cambridge, Mass.....	.....
Miss Esther Albe.....	.....	Newcastle.....	.....
Mrs. Adeline Yeaton.....	Cambridge.....	.....	.....
Warren A. Osgood.....	Fort Cottage.....	Suncook.....	.....
Elias Tarlton.....	.....	Newcastle.....	.....
NEWBURY.			
George W. Blodgett.....	Forest House.....	Newbury.....	200
Mrs. S. J. Clement.....	Lake.....	" ".....	30
N. S. Johnson.....	Mountain House.....	Mt. Sunapee.....	.....
Mrs. Davis Shaw.....	Mountain View.....	South Newbury.....	12
Mrs. B. A. Dodge.....	.....	Mt. Sunapee.....	.....
Mrs. Cerendo Gillingham.....	Twilight House.....	Newbury.....	.....
Mrs. Harry C. Morse.....	Maple Grove Farm.....	South Newbury.....	20
N. B. Bly.....	Fair Haven Farm.....	" ".....	10
Jonathan Rowe.....	.....	Newbury.....	.....
NEW DURHAM.			
Charles Brooks.....	.....	New Durham.....	20
Joseph P. Brooks.....	.....	" ".....	10
NEW IPSWICH.			
H. A. Coleman.....	Appleton Arms.....	New Ipswich.....	50
C. L. Robbins.....	.....	" ".....	.....
Fannie Barr.....	.....	" ".....	.....
J. Silver, Jr.....	Clark's Hotel.....	" ".....	.....
George Porter.....	.....	" ".....	.....
A. J. Jorden.....	Cold Spring Farm.....	" ".....	10
NEWINGTON.			
Mrs. J. W. Whidden.....	.....	Newington.....	.....
Moses H. Whitman.....	.....	" ".....	.....
C. M. DeRochemont.....	.....	" ".....	.....
James W. Coleman.....	.....	" ".....	.....
Frederick Pickering.....	.....	" ".....	.....
NEWMARKET.			
Joseph B. Silver.....	Washington House.....	Newmarket.....	30
John Smith.....	Elm House.....	Newmarket Junction.....	.....
Nelly Morgan.....	Newmarket Hotel.....	Newmarket.....	20
Edward H. Clark.....	.....	" ".....	.....
Mrs. Jasper H. Burley.....	.....	" ".....	.....
Almon P. Smith.....	Garrison Cottage.....	" ".....	14
Smith Sanborn.....	.....	" ".....	8
O. J. Drew.....	Bay View Farm.....	" ".....	8

SUMMER HOTELS AND BOARDING-HOUSES.—*Continued.*

Proprietor or Landlord.	Name of House.	P. O. Address.	No. of Guests.
NEW LONDON.			
Burpee & Whipple.....	The Heidelberg.....	New London.....	125
H. J. Currier.....	The Elms.....	" ".....	25
D. S. Seamans.....	Seamans' House.....	" ".....	20
N. C. Todd.....	Maple Hill House.....	" ".....	25
J. C. Cross.....	Little Sunapee.....	" ".....	16
Baxter Gay.....	Glengae House.....	" ".....	50
G. M. Knight.....	Sunapee View.....	" ".....	40
G. P. Sholes.....	Mountain View.....	" ".....	20
E. F. Messer.....	Pleasant View.....	" ".....	20
A. J. Messer.....	Highland Home.....	" ".....	30
Hiram Sargent.....	Pleasant Lake Farm.....	" ".....	12
W. P. Messer.....	Lakeside Farm.....	" ".....	16
F. A. Messer.....	Maple Grove House.....	" ".....	16
Al Worthen.....	Burpee Hill House.....	" ".....	10
G. S. Prescott.....	Lake Side.....	" ".....	50
B. C. Davis.....	Willows.....	" ".....	10
J. K. Law.....	Willow Farm.....	" ".....	12
Natt Messer.....	Quiet Home.....	" ".....	10
Mrs. L. H. Fowler.....	Pine Tree Inn.....	" ".....	10
Mrs. E. G. Smith.....	Elm Farm.....	" ".....	10
David Hayes.....	Currier Home.....	" ".....	10
E. P. Burpee.....	.....	" ".....	10
C. E. Shepard.....	.....	" ".....	10
Stephen Messer.....	.....	" ".....	10
Mrs. C. D. Sargent.....	.....	" ".....	16
R. Farwell.....	.....	" ".....	16
A. J. Sargent.....	.....	" ".....	10
W. S. Carter.....	Carter House.....	" ".....	10
N. L. Sargent.....	Sargent Cottage.....	" ".....	5
J. B. Roby.....	.....	" ".....	10
Mrs. R. O. Messer.....	.....	Scytheville.....	10
Mrs. A. B. Whittier.....	Whittier House.....	" ".....	20
NEWPORT.			
E. L. Putney.....	Newport House.....	Newport.....	10
Henry Barker.....	Phenix.....	" ".....	50
Samuel M. Rockwell.....	Pleasant View Farm.....	" ".....	8
George H. Fairbanks.....	.....	" ".....	10
Richard Thompson.....	.....	" ".....	12
Benjamin F. Carr.....	.....	" ".....	10
Calvin Brown.....	Riverside House.....	" ".....	50
Jonathan Daglish.....	.....	" ".....	10
Mrs. Goodrich.....	.....	" ".....	10
Solomon Moody.....	Maplewood Farm.....	" ".....	12
Ira Harmon.....	Highland Cottage.....	North Newport.....	20
Edward Fletcher.....	.....	" ".....	12
Frederick W. Aiken.....	.....	Newport.....	10
Charles E. Stubbs.....	.....	" ".....	10
Sidney Stockwell.....	.....	" ".....	10
Mrs. J. E. Reed.....	.....	" ".....	10
NEWTON.			
George W. Hoyt.....	Travelers' Home.....	Newton.....	47
Nathan Gould.....	Gould's Hill Farm.....	" ".....	19
NORTHFIELD.			
Mrs. Walter Glines.....	.....	Northfield.....	10
C. W. Whicher.....	Maple Cottage.....	Tilton.....	20
Morrill Moore.....	.....	Northfield.....	15
NORTH HAMPTON.			
Albert Bachelder.....	Little Boar's Head.....	Little Boar's Head... ..	100
G. A. Boynton.....	Boynton.....	" ".....	25

CONNECTICUT LAKE.

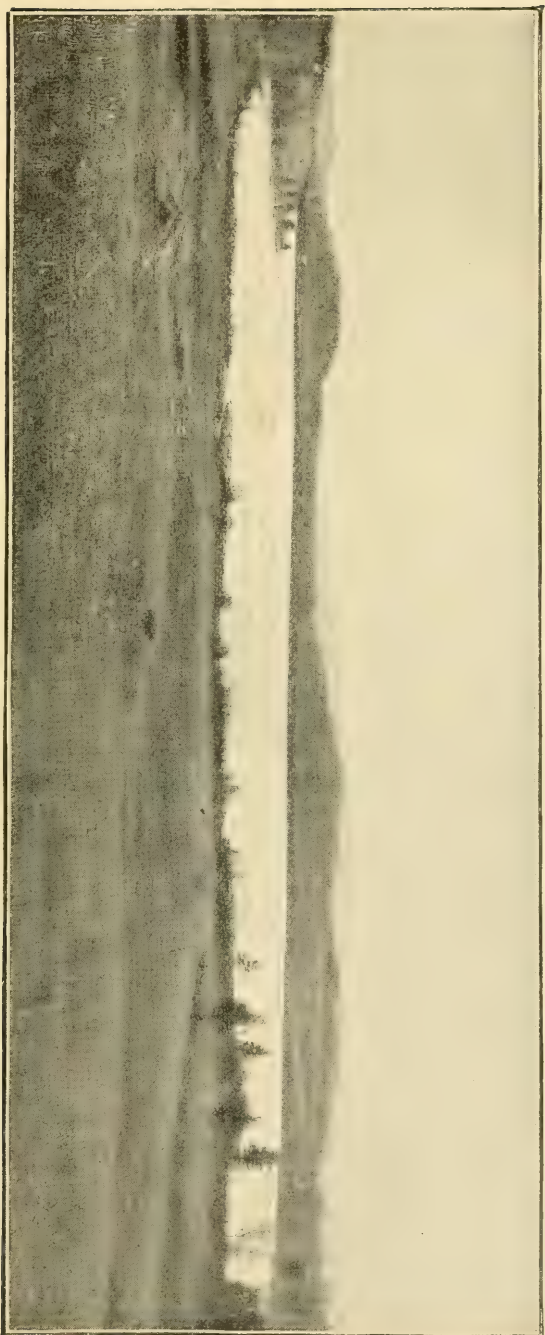


SUMMER HOTELS AND BOARDING-HOUSES. — *Continued.*

Proprietor or Landlord.	Name of House.	P. O. Address.	No. of Guests.
NO. HAMPTON. — <i>Cont'd.</i>			
E. T. Brown.....		Little Boar's Head.....	
C. Prochold.....		North Hampton.....	
NORTHUMBERLAND.			
E. E. Tibbetts.....	Melcher House.....	Groveton.....	90
Merrian, Johnson & Co..	Eagle Hotel.....	".....	50
T. S. Clark.....		".....	
John Emes.....		".....	
NORTHWOOD.			
Mrs. B. J. Demeritt.....	Demeritt House.....	Northwood.....	
Mrs. Sarah Caswell.....	Caswell House.....	Northwood Ridge.....	10
Mrs. S. S. Moore.....	Moore House.....	Northwood Centre.....	
S. W. Drake.....	Harvey.....	".....	
J. M. Perry.....		Northwood.....	16
N. E. Cate.....		Northwood Ridge.....	
H. H. Hilliard.....		Northwood Narrows.....	
Francis J. Hanson.....		Northwood.....	
Mrs. G. Smith.....		".....	
Enoch D. Flagg.....		".....	20
NOTTINGHAM.			
Charles O. Smith.....		Northwood.....	12
Mary J. Demeritt.....		Nottingham.....	
Ira T. Daniels.....		North Nottingham.....	14
W. O. Hills.....		Nottingham.....	
Joseph P. Harvey.....		".....	
Samuel Durgin.....		".....	
Frank H. Butler.....		".....	
ORANGE.			
D. L. Bryant.....	Mountain House.....	Canaan.....	30
ORFORD.			
A. D. Chamberlin.....	Elm House.....	Orford.....	
W. R. Barnes.....		".....	
Everett Gage.....		".....	
OSSIPEE.			
E. P. Allen.....	Carroll House.....	Ossipee.....	
J. W. Chamberlain.....	Central House.....	".....	40
E. K. Knox.....		West Ossipee.....	
James Carney.....		Ossipee.....	
Daniel J. Sanders.....		Leighton's Corner.....	
J. E. Hodgdon.....	Hackmetack.....	Ossipee.....	20
Alvah Hazlett.....		".....	
PELHAM.			
Charles Brown.....	Stickney Farm.....	Pelham.....	20
W. W. Butler.....	Butler Farm.....	".....	20
Mrs. Claribel Butler.....	Gumpus Valley.....	".....	20
Angie G. Kent.....	Forest Cottage.....	".....	7
Oriando W. Spaulding.....		".....	
PEMBROKE.			
John T. Merrill.....	Pembroke Cottage.....	Pembroke.....	18
David B. Richardson.....		".....	
George P. Morgan.....		".....	
Frank W. Stevens.....		East Pembroke.....	
PETERBOROUGH.			
F. B. Tucker.....	Tucker House.....	Peterborough.....	
A. O. Smith.....		".....	

SUMMER HOTELS AND BOARDING-HOUSES.—*Continued.*

Proprietor or Landlord.	Name of House.	P. O. Address.	No. of Guests.
PETERBORO'.—<i>Cont'd.</i>			
C. W. Hunter.....	Silo Farm.....	Peterborough.....	8
Jerome B. Shedd.....	".....	".....	10
J. O. Nay.....	".....	".....	12
Mrs. Mary A. Farnum.....	".....	".....	12
William Moore.....	".....	".....	12
J. E. Ellsworth.....	".....	".....	12
Walter Haywood.....	".....	".....	12
Philip Turner.....	Rock Farm.....	".....	12
John Lynch.....	".....	".....	12
Mrs. William Burt.....	".....	".....	10
Marshall Nay.....	".....	".....	10
PLAISTOW.			
James M. Davis.....	".....	Plaistow.....	10
Isaac H. Pollard.....	".....	".....	10
Summer Courser.....	".....	".....	10
N. H. Wentworth.....	Kimball Farm.....	Atkinson Depot.....	10
PLYMOUTH.			
C. M. Morse.....	Pemigewasset.....	Plymouth.....	250
Kate Jones.....	".....	Piermont.....	10
J. K. Hasford.....	".....	".....	10
PITTSBURG.			
Henry Fling.....	Lake House.....	Pittsburg.....	20
Thomas Chester.....	Camp Chester.....	".....	30
Ed. Blais.....	".....	".....	30
PITTSFIELD.			
Josiah S. James.....	Mountain View.....	Pittsfield.....	35
F. E. Sanborn.....	Grand View.....	".....	10
D. O. True.....	Highland Farm.....	".....	10
Mrs. S. P. Bunker.....	Park House.....	".....	25
S. A. Brown.....	Maple Hill Farm.....	".....	25
H. Porter Smith.....	".....	".....	25
P. S. Elliott.....	".....	".....	10
F. W. Blake.....	".....	".....	10
RANDOLPH.			
R. I. Leighton.....	Randolph Hill.....	Gorham.....	75
L. M. Watson.....	Ravine House.....	".....	60
Benjamin Kelsey.....	Kelsey House.....	".....	18
George Wood.....	Riverville Farm.....	Randolph.....	10
G. C. Bradley.....	Bradley's Cottage.....	".....	12
RAYMOND.			
George W. Shepard.....	Shepard House.....	Raymond.....	25
F. G. Bean.....	Eagle Hotel.....	".....	25
P. B. Corson.....	Corson House.....	".....	25
T. F. & Hiram McClure.....	McClure House.....	".....	23
Frank R. Grant.....	Lamprey House.....	".....	20
John Eaton.....	Walnut Hill House.....	".....	25
Joseph Richardson.....	Richardson House.....	".....	10
M. V. B. Gile.....	Giles Cottage.....	".....	12
H. W. Batchelder.....	Batchelder House.....	".....	25
R. G. L. Tilton.....	Tilton.....	".....	15
W. M. Leighton.....	The Wayside Farm.....	".....	14
Ryland J. Mack.....	Raymond Cottage.....	".....	14
J. W. Harriman.....	".....	".....	14
RICHMOND.			
O. O. Whipple.....	".....	Richmond.....	10
L. A. Ballou.....	Red-top Farm.....	".....	10



BLAISDEL'S POND, SUTTON.

SUMMER HOTELS AND BOARDING-HOUSES. — *Continued.*

Proprietor or Landlord.	Name of House.	P. O. Address.	No. of Guests.
RICHMOND. — <i>Cont'd.</i>			
Leason Martin .....	.....	North Richmond.....	.....
RINDGE.			
Frank N. Wheeler	Rindge Hotel.....	Rindge .....	.....
John E. Wood .....	.....	East Rindge.....	.....
W. E. Stearns	Todd Hill House.....	Rindge	20
Mrs. L. L. Lawrence .....	.....	" .....	12
D. H. Sargent.....	.....	" .....	20
Frank D. Converse.....	.....	West Rindge.....	.....
Hermion F. Prescott.....	.....	.....	.....
Miss Susie Parsons.....	.....	Rindge .....	.....
Gilman P. Wellington.....	.....	" .....	.....
Henry W. Wellington.....	.....	" .....	.....
C. E. Robinson.....	.....	East Rindge.....	.....
Chester O. Hale .....	.....	Rindge	30
ROLLINSFORD.			
Lewis Carey	Salmon Falls House	Rollinsford.....	.....
RUMNEY.			
Charles Spalding.....	Welcome House.....	Rumney Depot.....	20
H. C. Lufkin.....	Valley Farm House.....	West Plymouth.....	16
R. B. Clark	Daisy Cottage	Quincy	16
C. E. Bunker.....	Central House.....	Rumney	30
S. Adams & Son.....	Elm Avenue House.....	West Rumney.....	30
T. G. Stevens.....	.....	Rumney.....	.....
C. C. Smart.....	.....	Rumney Depot.....	.....
RYE.			
Henry Knox	Ocean Wave House.....	Rye Centre.....	150
J. C. Philbrick & Son.....	Farragut & Atlantic.....	Rye Beach.....	300
G. G. Longee	Sea View.....	.....	200
E. P. Philbrick.....	Rising Sun Cottage.....	"	50
S. B. Spear	Woodbine	"	25
D. W. Dalton.....	Centennial House.....	" .....	.....
A. J. Drake	Drake Cottage.....	" .....	.....
J. W. F. Hobbs.....	Hobbs Cottage	"	15
C. O. Philbrick.....	Elm Cottage .....	" .....	.....
W. S. Philbrick.....	Urada .....	" .....	.....
Mrs. E. C. Huse	Straw Cottage.....	Rye.....	70
T. I. Marden	Marden House.....	Rye Beach.....	50
Horace Sawyer.....	Sawyer House.....	"	65
R. L. Locke.....	.....	" .....	.....
C. A. Jenness.....	Elmwood House.....	"	35
David Jenness.....	.....	" .....	.....
N. G. Jenness.....	.....	" .....	25
Sheridan Jenness.....	.....	" .....	.....
O. S. Jenness.....	Jenness House.....	"	26
Amos P. Brown.....	Brown's Cottage.....	Rye.....	20
George W. Brown.....	.....	.....	.....
Horace F. Rand.....	.....	Portsmouth.....	.....
S. W. Foss.....	.....	" .....	.....
SALEM.			
George Woodbury.....	Woodbury House.....	Salem	12
Isaac Campbell.....	Walnut Hill Farm	North Salem	38
Charles Webster.....	.....	Salem	5
George A. Lincoln.....	.....	North Salem.....	.....
SALISBURY.			
Dr. J. J. Dearborn.....	Summer House.....	Salisbury.....	20
M. A. Sawyer.....	.....	" .....	.....
J. C. Smith.....	.....	.....	.....

SUMMER HOTELS AND BOARDING-HOUSES. — *Continued.*

Proprietor or Landlord.	Name of House.	P. O. Address.	No. of Guests.
SALISBURY. — <i>Continued.</i>			
D. C. Stevens.....	.....	Salisbury.....	30
E. C. Currier.....	Maple Grove.....	West Salisbury.....	8
C. Greene.....	.....	Salisbury.....	.....
Mrs. John Corson.....	.....	.....	.....
F. P. Drew.....	Elm House.....	Salisbury Centre.....	12
Nicholas Wallace.....	.....	Salisbury.....	.....
F. W. Prince.....	Riverside Farm.....	West Salisbury.....	18
A. L. Chapman.....	Kearsarge Cottage.....	Salisbury.....	.....
D. J. Mann.....	.....	Salisbury Centre.....	.....
J. T. Stevens.....	.....	West Salisbury.....	.....
SANBORNTON.			
Charles O. Johnson.....	Lake Cottage.....	Laconia.....	30
Nathaniel Davis.....	.....	".....	.....
M. W. Bennett.....	Maplewood Farm.....	East Tilton.....	25
Hiram B. Philbrick.....	.....	.....	.....
A. M. Osgood.....	Highland Farm.....	Franklin Falls.....	16
J. B. Calef.....	.....	Sanbornton.....	.....
N. G. Yeaton.....	Mountain View.....	Tilton.....	12
Isaac B. Hoyt.....	.....	North Sanbornton.....	.....
SANDWICH.			
Henry F. Dorr.....	Sandwich House.....	Centre Sandwich.....	30
J. C. Burleigh.....	Pleasant House.....	".....	12
A. S. A. Gilman.....	.....	".....	10
H. E. Moulton.....	.....	".....	10
D. W. George.....	.....	".....	.....
Asahel Wallace.....	Bear Camp.....	".....	16
Samuel Chase.....	.....	".....	12
John A. Marston.....	.....	".....	20
S. D. Wiggin.....	.....	".....	16
L. C. Ambrose.....	Mount Whiteface House.....	North Sandwich.....	20
William McCrillis.....	Glen Cottage.....	".....	20
Frank Bryer.....	Mount Israel House.....	Centre Sandwich.....	18
Jonathan Tappan.....	.....	".....	30
Eleanor Gilman.....	.....	".....	10
S. H. Burleigh.....	Willow Cottage.....	".....	20
Ruth Claffrey.....	.....	".....	15
H. H. Powers.....	Learsi Heights Cottage..	".....	20
James E. Mudgett.....	.....	".....	15
James B. Goodwin.....	.....	".....	.....
SANDOWN.			
Enoch R. Quimby.....	Triple Elm.....	Sandown.....	15
John S. Colby.....	Elm View.....	".....	24
Edwin C. Mills.....	Penne Royal.....	".....	40
Charles A. Darbe.....	Darbe House.....	".....	22
Allen Senter.....	.....	".....	20
David Tilton.....	Tilton House.....	".....	20
SEABROOK.			
Lydia Parker.....	Parker House.....	Seabrook.....	.....
SHELBURNE.			
C. C. Hibbard.....	Winthrop House.....	Shelburne.....	40
S. J. Morse.....	Spring House.....	".....	75
A. C. Evans.....	Evans Cottage.....	".....	.....
A. E. Whitman.....	Maple Grove Cottage.....	".....	10
S. A. Gates.....	Gates Cottage.....	".....	35
A. E. Philbrick.....	Philbrick Farm.....	".....	25
C. E. Philbrook.....	Grove Cottage.....	Gorham.....	.....



KEYSAR LAKE, SUTTON.

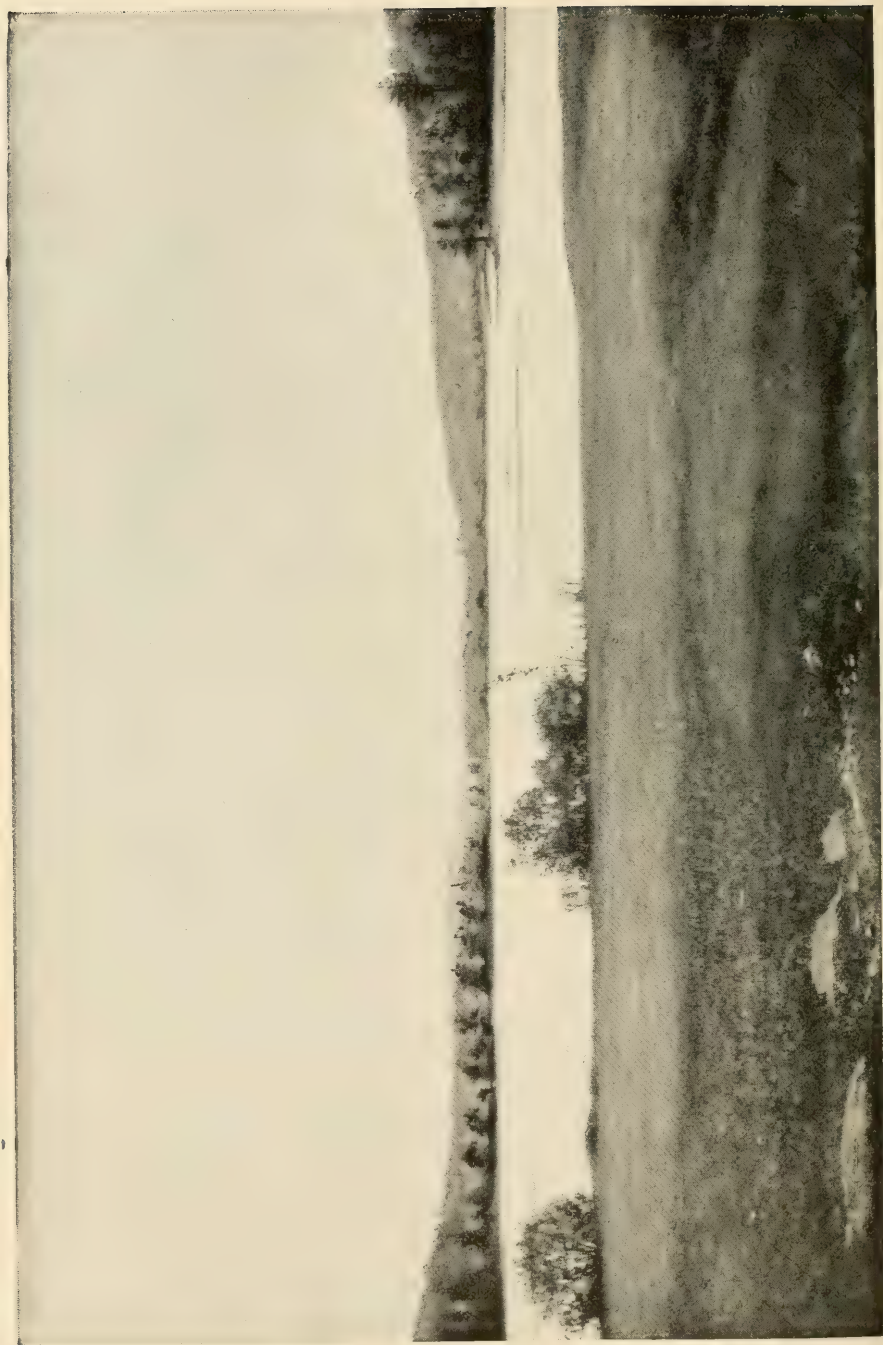
SUMMER HOTELS AND BOARDING-HOUSES. — *Continued.*

Proprietor or Landlord.	Name of House.	P. O. Address.	No. of Guests.
SOUTH HAMPTON.			
Frank O. Towle.....	.....	South Hampton.....	20
David T. Woodman.....	.....	" ".....	16
Miss Clara E. Downing..	.....	" ".....	16
SOUTH NEWMARKET.			
L. H. Pinkham.....	Newfield House.....	South Newmarket.....	.....
SPRINGFIELD.			
S. P. Colby.....	Colby House.....	George's Mills.....	50
M. T. Chase.....	Star Lake House.....	" ".....	20
Talant Boyce.....	.....	West Springfield.....	30
Enos Collins.....	.....	Springfield.....	16
C. F. Woodward.....	Springvale Cottage.....	" ".....	16
STARK.			
William T. Pike.....	.....	Stark.....	10
Benjamin A. Veasey.....	.....	" ".....	.....
STEWARTSTOWN.			
M. B. Noyes.....	Camp Diamond.....	Stewartstown.....	.....
STODDARD.			
S. J. Harrington.....	Central House.....	Stoddard.....	20
B. Griffiths.....	.....	" ".....	20
STRATHAM.			
David Jewell.....	.....	Stratham.....	10
Charles A. Wiggin.....	.....	Exeter.....	.....
George B. Wiggin.....	.....	Stratham.....	4
Mrs. Sarah E. Taylor.....	.....	" ".....	.....
Dudley C. Littlefield.....	.....	Newmarket Junction.....	.....
STRAFFORD.			
John M. Whitehouse.....	Blue Hill Cottage.....	Strafford Corner.....	.....
John M. Dow.....	Bow Lake House.....	" ".....	.....
Sarah J. Caverly.....	.....	" ".....	.....
William W. Waleron.....	.....	" ".....	.....
Gilbert Shaw.....	.....	Centre Strafford.....	.....
A. P. Wentworth.....	.....	Strafford.....	.....
SUNAPEE.			
Lake Sunapee Hotel Co..	Ben Mere.....	Sunapee.....	150
Francis M. Dana.....	Lake View.....	" ".....	110
John Putnam.....	.....	" ".....	100
F. E. Colby.....	Sunapee House.....	" ".....	20
George W. Colby.....	Hillside Farm.....	" ".....	20
George Dodge.....	Maplewood House.....	" ".....	20
John Y. Gardner.....	Prospect House.....	" ".....	20
Chase & Martin.....	Pleasant Home.....	George's Mills.....	60
E. P. Stickney.....	Solid Comfort.....	" ".....	12
E. G. Chase.....	The Elms.....	Sunapee.....	.....
N. P. Barker.....	.....	" ".....	.....
E. R. Sargent.....	.....	" ".....	25
John S. Whipple.....	Straw Cottage.....	George's Mills.....	12
L. F. Bartlett.....	.....	" ".....	20
John C. Purington.....	.....	Sunapee.....	14
SURRY.			
D. B. C. Hill.....	Hotel Surry.....	Surry.....	15
E. H. Joslin.....	Joslin Farm.....	" ".....	.....
Daniel Wilder.....	Sunny Side.....	" ".....	8

SUMMER HOTELS AND BOARDING-HOUSES.—*Continued.*

Proprietor or Landlord.	Name of House.	P. O. Address.	No. of Guests.
SUTTON.			
Keysar & Putney.....	Prospect House.....	North Sutton.....	30
W. P. Sargent.....	The Elms.....	" ".....	30
John Pressey.....	Meadow Farm.....	" ".....	25
John H. Keysar.....	Twin Pine.....	" ".....	20
Henry H. Bell.....	Maple Cottage.....	" ".....	14
J. G. Huntoon.....	Huntoon House.....	" ".....	25
C. E. Hosmer.....	Penacook.....	" ".....	18
George Bailey.....	Keysar Lake House.....	" ".....	16
C. H. Kohlreusch, Jr.....	Hillside Farm.....	" ".....	12
James M. Sargent.....	Woodbine.....	" ".....	12
Henry V. Little.....	Brookside Cottage.....	" ".....	14
Fred A. Felch.....	Pleasant View.....	" ".....	12
Orrin M. Humphrey.....		Sutton.....	20
SWANZEY.			
F. P. A. Kinson.....	Maple Hill Farm.....	Swanzy.....	
C. H. Holbrook.....	Highland House.....	".....	30
TAMWORTH.			
Mark E. Roberts.....	Chocorua House.....	Tamworth.....	60
A. E. Wiggin.....	Wiggin House.....	".....	50
N. H. Varney.....	Woodbine Cottage.....	".....	18
Albion Blaisdell.....	Fair View.....	".....	15
L. M. Schenk.....	Eagle Cliff.....	".....	30
J. S. Remick.....	Rest Cottage.....	".....	10
Lowell Ham.....		".....	
Otis G. Hatch.....	Riverside Cottage.....	".....	20
George W. Roberts.....		".....	
L. D. Blake.....	Sunset Cottage.....	".....	12
J. A. Wiggin.....	Robinson Cottage.....	".....	10
J. R. Perkins.....		".....	12
Frank Blaisdell.....	Beechwood Cottage.....	".....	14
Kate Sleeper.....	Wonolancet Farm.....	".....	30
Charles H. Remick.....	Wankanete.....	".....	25
Nathaniel Berry.....	Maplewood Cottage.....	".....	9
Augusta A. Stevenson.....		South Tamworth.....	
David Morrill.....		Tamworth.....	10
George C. Whitney.....	Willow.....	South Tamworth.....	
William Perkins.....			
TEMPLE.			
Mrs. G. D. Young.....	Mountain View.....	Temple.....	25
Mrs. Josiah Fisk.....		".....	10
Mrs. E. E. Colburn.....	Pleasant View.....	".....	15
Mrs. D. C. Bragdon.....	Highland Farm.....	".....	12
Mrs. E. G. Shedd.....	The Chestnut.....	".....	11
Mrs. N. Holt.....		".....	
Mrs. S. B. Farrar.....	Forest Farm.....	Wilton.....	
THORNTON.			
A. H. Kendall.....	Kendall House.....	Thornton.....	20
J. Parker.....	Hix Mountain.....	Woodstock.....	35
W. Merrill.....		Thornton.....	
TILTON.			
Henry Q. Dalton.....	Lakeside House.....	East Tilton.....	35
Mrs. Lydia C. Sanborn.....	Lakeview.....	".....	25
Nelson A. Philbrook.....	Riverside.....	Tilton.....	
George A. Philbrook.....	Philbrook.....	".....	45
W. H. W. Rollins.....	The Elms.....	East Tilton.....	20
Nelson H. Elms.....		Tilton.....	40

MELLEN LAKE WASHINGTON

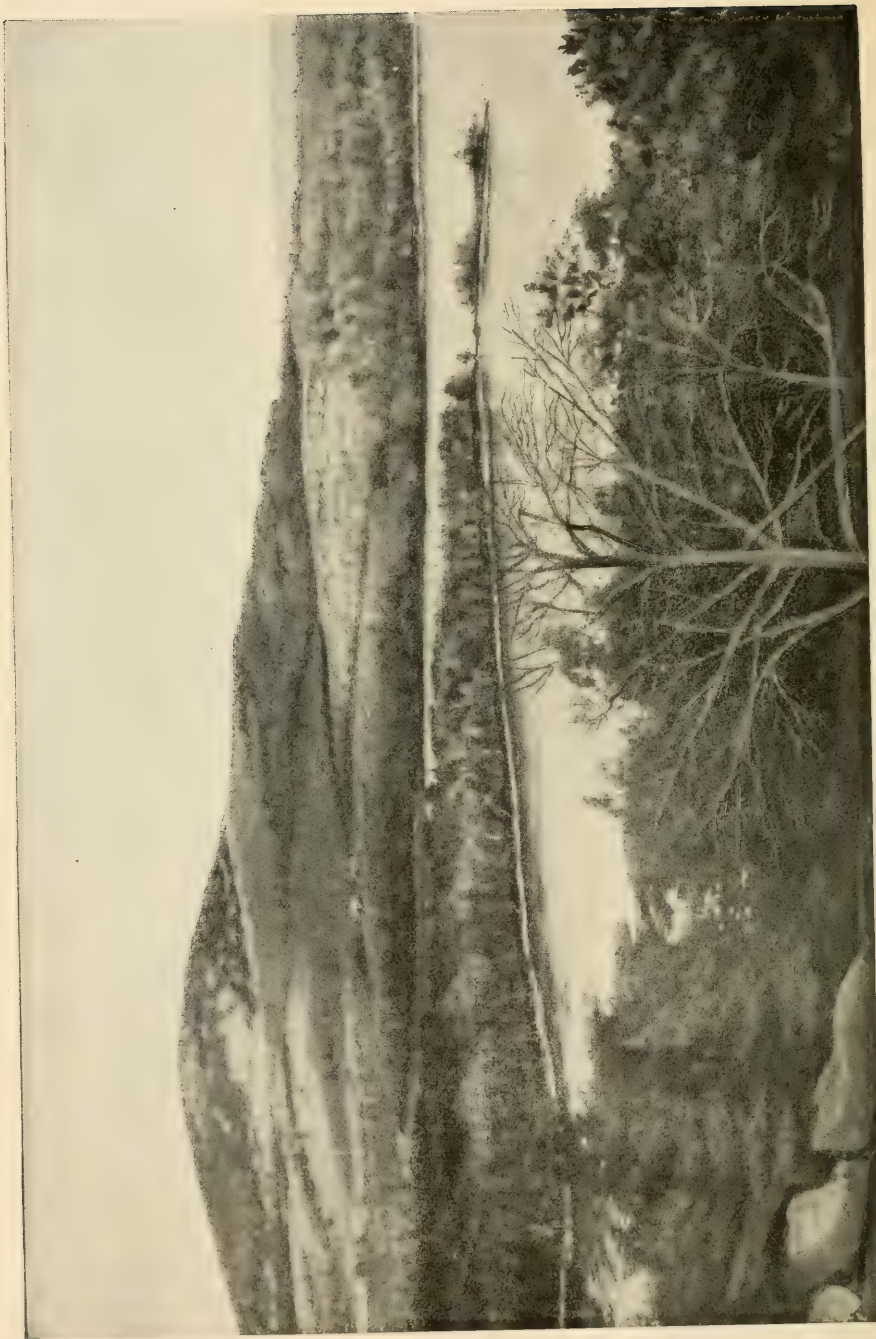


SUMMER HOTELS AND BOARDING-HOUSES.—*Continued.*

Proprietor or Landlord.	Name of House.	P. O. Address.	No. of Guests.
TROY.			
John L. Perry	Monadnock House.	Troy	30
TUFTONBOROUGH.			
D. D. Wingate	Wingate Farm	Melvin Village	30
Charles Wiggin	Maple House	Mirror Lake	25
Joseph C. Blake	Lakeside	" "	25
John A. Edgerly	Edgerly House	Melvin Village	10
Mrs. C. H. Shepard	Lakeside Cottage	" "	12
Francis Straw	Fair View	Tuftonboro' Centre	16
G. E. S. Dearborn	Enon	" "	14
C. W. Purkham	Bald Peak House	Melvin Village	20
Jacob Hodgdon	"	Tuftonborough	
D. M. Smith	"	"	
Frank Libby	"	"	
UNITY.			
W. S. Upton	Unitage House	Unity	75
William H. Whitmore	Elm Dale	Claremont	10
E. H. French	Maplewood House	Unity	
H. H. Roundy	"	"	
J. E. Reed	Hillside Farm	"	
WAKEFIELD.			
R. H. Pike	Union House	Union	20
W. F. Merrow	Davis House	East Wakefield	
Samuel Kershaw	Sunny Side	"	
J. C. Penny	Elm	Union	25
C. B. Remick	Sanborn House	Wolfeboro' Junction	20
James W. Hill	"	E. Wakefield Depot	20
J. C. Philbrick	Oak Hill Farm	North Wakefield	20
A. Wentworth	Elmwood Inn	Woodsman	14
Henry C. Tibbetts	Valley Grange	Wakefield	40
L. G. Waldron	Maplewood Inn	North Wakefield	10
H. B. Fellows	"	Wolfeboro' Junction	30
C. H. Garland	Maple Ridge	Union	15
John Kimball	"	"	35
Alvah S. Garland	"	"	
Hiram W. Hutchins	Garland House	Wolfeboro' Junction	
John F. Garland	"	South Wakefield	50
John F. Farnham	"	Wakefield	
Asa Brown	"	"	
Miss H. L. Frobisher	"	"	
Mrs. Susan C. Davis	"	E. Wakefield Depot	
John W. Kimball	"	Wolfeboro' Junction	35
George F. Piper	"	"	
Isaac W. Fellows	Lovell Lake	" "	20
John D. Waldron	"	Woodsman	
H. R. Waldron	"	North Wakefield	
Peter C. Young	"	"	
WALPOLE.			
C. R. Crowell	Elmwood House	Walpole	75
George E. Sherman	Dinsmore	"	50
Miss Eliza Barrett	"	"	
Henry A. Huntley	Cold River House	"	30
Mrs. M. H. Blake	Blake Cottage	"	12
Miss Harriet C. Hodgkins	"	"	
WARNER.			
M. M. Fisher	Hillside Farm	Warner	20
A. J. Hook	Kearsarge Hotel	"	40
Walter Sargent	Elm Farm	"	20
Mrs. Hollis Towns	"	"	20

SUMMER HOTELS AND BOARDING-HOUSES.—*Continued.*

Proprietor or Landlord.	Name of House.	P. O. Address.	No. of Guests.
WARNER. — <i>Continued.</i>			
Miss Mattie Burbank.....	.....	Warner.....	10
Edwin George.....	.....	".....	.....
Fred C. Brockway.....	.....	".....	.....
Thomas W. Nelson.....	.....	".....	.....
WARREN.			
J. F. Thayer.....	The Moosilauke.....	Warren.....	100
A. L. Merrill.....	Merrill's Mountain.....	".....	35
D. F. Stetson.....	Stetson House.....	".....	8
G. H. L. Head.....	Moosilauke.....	".....	60
Rev. L. W. Prescott.....	Riverside House.....	".....	10
J. F. Merrill.....	Watsonmee Cottage.....	".....	16
Mrs. George C. Clifford.....	.....	".....	.....
Prof. D. A. French.....	Maple Cottage.....	".....	8
A. M. Pillsbury.....	Clover Nook Cottage.....	".....	6
WASHINGTON.			
T. S. Stowell.....	Lovewell.....	Washington.....	22
H. B. Millen.....	Washington Farm.....	".....	32
H. M. Bowman.....	Danforth House.....	".....	.....
A. T. Wright.....	Fisher Farm.....	".....	15
WATERVILLE.			
S. B. Elliott.....	.....	Waterville.....	.....
WEARE.			
Mrs. S. E. C. Allen.....	Allen House.....	Weare Centre.....	30
Charles W. Everett.....	Everett House.....	North Weare.....	10
Henry Davis.....	Elm Farm.....	".....	18
H. O. Chase.....	Pinnacle Farm.....	".....	20
Eben B. Bartlett.....	Mountain View House.....	South Weare.....	25
H. R. Nichols.....	Maple View.....	".....	14
Elijah Dow.....	Forest Farm.....	North Weare.....	14
J. L. Dow.....	Prospect House.....	".....	10
B. E. Hollis.....	Hollis House.....	".....	20
WEBSTER.			
Charles H. George.....	Long Pond.....	Webster.....	12
Andrew J. Flanders.....	Oakland Farm.....	".....	25
Joseph B. Thurber.....	Highland Farm.....	Mast Yard.....	18
W. F. Wadleigh.....	Ridge Farm.....	Webster.....	15
Tyler C. Sweatt.....	Glen Cottage.....	".....	15
Henry F. Pearson.....	.....	".....	.....
Daniel Scribner.....	.....	".....	.....
F. B. Sawyer.....	.....	".....	.....
James Goodhue.....	Grove Hill.....	".....	8
J. L. & H. H. Gerrish.....	.....	Mast Yard.....	8
WENTWORTH.			
J. W. Whitcher.....	Wentworth House.....	Wentworth.....	.....
William C. Pillsbury.....	.....	".....	.....
Van Merrill.....	.....	".....	8
George Plumer.....	.....	".....	10
F. D. Elsworth.....	.....	".....	16
Alphonso Brown.....	Brookside Cottage.....	".....	6
Laura B. Elsworth.....	.....	".....	8
Francis E. Goodell.....	.....	".....	6
Edward G. Tenney.....	.....	".....	12
WESTMORELAND.			
George Cobb.....	Pyncheon.....	Westmoreland.....	.....
William Brown.....	Brown's Cottage.....	".....	10



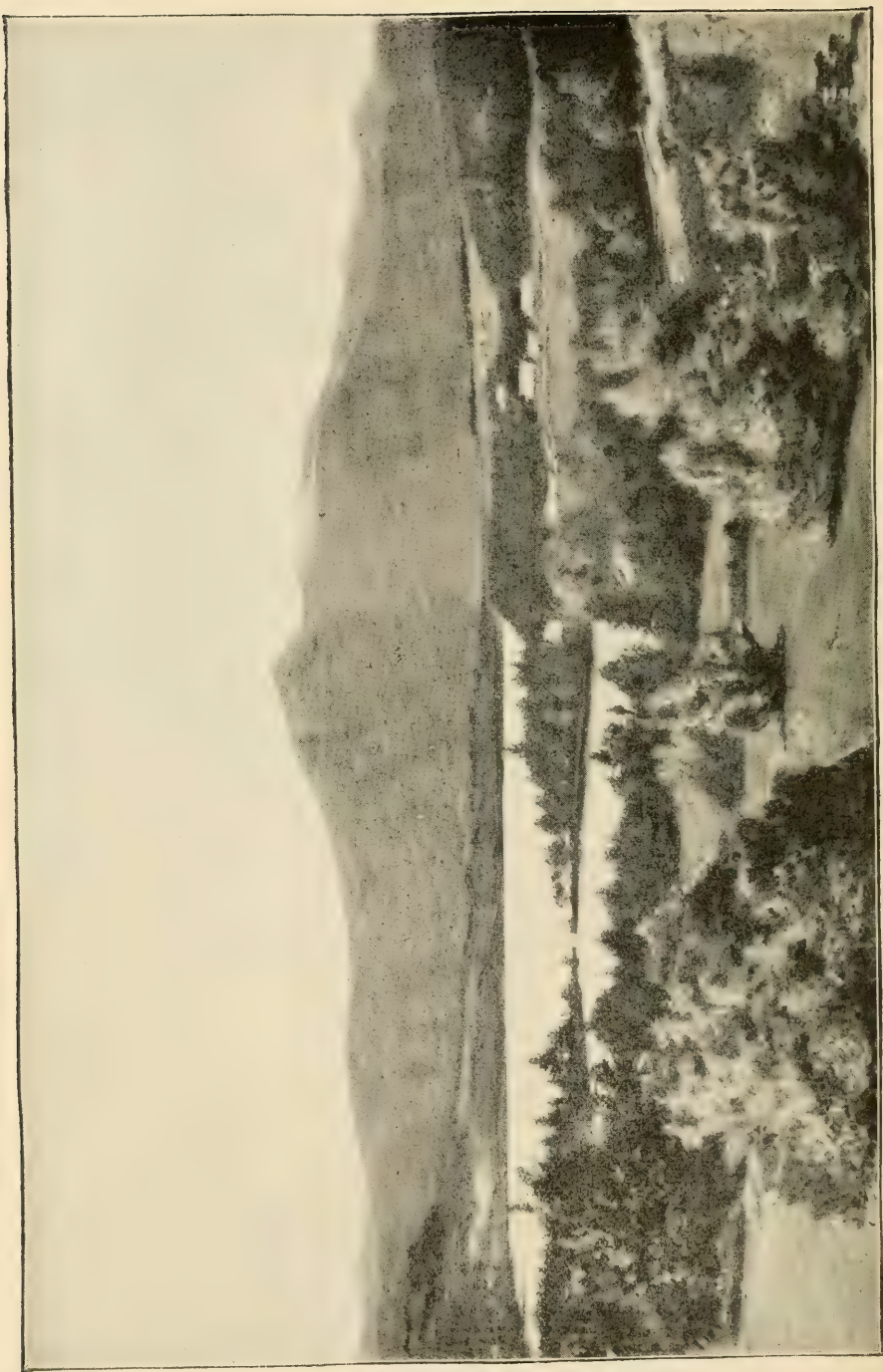
HALF MOON LAKE, WASHINGTON.

SUMMER HOTELS AND BOARDING-HOUSES. — *Continued.*

Proprietor or Landlord.	Name of House.	P. O. Address.	No. of Guests.
WESTMORELAND.—<i>Con.</i>			
Mrs. Isaac Derby.....	Derby House.....	Westmoreland.....	12
N. Littlefield.....	Pleasant Hill Farm.....	".....	
WHITEFIELD.			
M. F. Dodge & Son.....	Mountain View.....	Whitefield.....	85
H. W. Fiske.....	Fiske House.....	".....	40
H. J. Bowles.....	Kimball Hill.....	".....	
Ira A. Mussey.....	Pond View Farm.....	".....	15
J. A. Goodwin.....	Prospect Cottage.....	".....	14
Mrs. E. M. Patten.....	".....	".....	
H. M. Leonard.....	".....	".....	
James Hunt.....	".....	".....	
WILMOT.			
Dr. Joseph Hicks.....	Winslow House.....	28 School Street, Boston, Mass.....	100
WILTON.			
S. B. Senter.....	Everett House.....	Wilton.....	75
Levi Putnam.....	Grove.....	".....	
E. P. Hutchinson.....	Pine Cliff.....	".....	
Charles Moore.....	Summit Cliff.....	".....	
A. D. Abbott.....	Abbott Hill.....	".....	10
Rodney Perham.....	Highland Farm.....	".....	
R. M. Moore.....	Sunset Bank.....	".....	12
Charles Wilson.....	".....	".....	
G. M. Boynton.....	".....	".....	
Harvey Barnes.....	".....	".....	
E. C. Curtis.....	".....	".....	
W. W. Burton.....	".....	".....	20
WINCHESTER.			
E. A. Winter.....	Winchester Hotel.....	Winchester.....	
Henry Courillard.....	".....	".....	
WINDHAM.			
J. W. Dinsmore.....	Lake View House.....	Canobie Lake.....	20
Mrs. M. E. Call.....	Elm Farm.....	Windham.....	20
Mrs. E. M. Cutting.....	Pine Hill Cottage.....	South Windham.....	16
J. A. Moore.....	Sunset Farm.....	Londonderry.....	15
G. W. Noyes.....	Noyes Farm.....	Canobie Lake.....	18
G. W. Johnson.....	".....	".....	
M. R. Page.....	".....	".....	
Mrs. J. S. Clark.....	".....	Windham Depot.....	12
Abel Dow & Son.....	Granite Grove.....	Canobie Lake.....	
H. E. Reynolds.....	".....	West Windham.....	
J. G. Bradford.....	Willow Cottage.....	Windham.....	10
WOLFEBOROUGH.			
Charles H. Rollins.....	Pavilion.....	Wolfeborough.....	
Daniel Horn.....	Belleview.....	".....	
Levi Horn.....	Glen.....	".....	40
C. W. Gilman.....	Lake View.....	".....	20
J. H. Warren.....	Bay View.....	".....	
John L. Wiggin.....	Maple Cottage.....	".....	14
Mrs. R. R. Davis.....	Elm House.....	".....	
W. B. Randall.....	Randall House.....	".....	15
H. B. Stewart.....	Stewart House.....	".....	20
W. B. Fullerton.....	Pebble Cottage.....	".....	
S. A. Meadon.....	Willow.....	".....	25
W. D. Hersey.....	Hersey Cottage.....	".....	20
S. N. Furber, Jr.....	Fair View.....	".....	15
Daniel Cotten.....	Cotten House.....	East Wolfeborough.....	

SUMMER HOTELS AND BOARDING-HOUSES. — *Continued.*

Proprietor or Landlord.	Name of House.	P. O. Address.	No. of Guests.
WOLFEBOROUGH.—<i>Con.</i>			
Henry Cotten.....	.....	East Wolfeborough..	.....
J. W. Piper.....	.....	Wolfeborough.....	20
S. W. Fay.....	.....	.....	.....
WOODSTOCK.			
Buchanan & Willis.....	Deer Park.....	North Woodstock....	200
A. W. Sawyer.....	Fair View.....	" ".....	60
S. S. Sharon.....	Mountain View.....	" ".....	70
George F. Russell.....	Russell House.....	" ".....	75
Charles H. Russell.....	Cascade.....	" ".....	30
W. L. E. Hunt.....	The Innette.....	" ".....	20
C. L. Parker.....	Parker.....	Windham.....	25
J. H. Batchelder.....	Alpine House.....	North Woodstock....	90
N. Boynton.....	Pemigewasset Cottage..	Woodstock.....	.....
J. Parker.....	Hix Mountain House.....	" ".....	.....
W. F. Butler.....	Woodstock House.....	North Woodstock....	20
W. A. Smith.....	.....	" ".....	23
M. H. Kendall.....	Central Cottage.....	" ".....	18



CHOCORUA LAKE, TAMWORTH.

MEETINGS OF THE BOARD.

MEETINGS OF THE BOARD.

ANNUAL FIELD MEETING AT HAMPTON.

The seventh annual field meeting of the State Board of Agriculture was held at Boar's Head, Hampton Beach, August 18, 1892. The attendance was the largest in the history of the meeting and great interest was manifested in the subjects announced for discussion.

At 11 o'clock A. M. the meeting was called to order by President Humphrey as follows:

REMARKS OF THE PRESIDENT.

Ladies and Gentlemen:

We are here with two distinguished gentlemen from out of the State, as well as with a supply of home talent. These men will give you new ideas and fresh information in regard to the great agricultural interests of this country.

We find that the people all over the country are awaking, and they are getting out of the idea that the farmer should not keep up with the times as well as anybody else. The manufacturer to-day could not live if he did not keep up with the times.

I was in a manufacturing establishment last fall, which had just started up, and I looked around and saw — what did I see? I saw a machine, where they were spinning, which had five thousand spools on it. Thirty years ago one hundred and fifty were as many as they worked on one machine, but here were five thousand all running right on this spinning machine. That shows the advance that has been made in

the process of manufacturing, and every manufacturer is obliged to have such machines. They do have them, they keep up with the times, and there is where lies their success.

Why should not the farmers keep up with the times and do things right and not lag back. I have lived long enough to know that success in any business requires progress, and it is no less so in farming.

We are all aware of the scarcity of help. It is a trouble to get good help. If you can get a machine that will do your work or any part of it, instead of employing man power, you have gained so much. I find that a large number of places in New Hampshire have gone ahead in that line.

In dairying we stand ahead of what we were two years ago, largely due to the fact that we have good dairy machinery and implements for the making of butter, and we have also learned how to take care of the by-products of the cow.

We can raise our corn to-day as cheap as it can be raised anywhere else. There is no trouble about it. One reason why we can do this is because we have found out one thing that we did not know, and that is this: We didn't understand how to take care of the fodder corn to use it to advantage. To-day the fodder that comes from your corn crop is worth as much as the best crop of hay would be from the same land. You can get as much benefit from it. Twenty years ago we didn't know it was worth so much, and we would leave the stalks standing, perhaps, or would manage to get rid of them the best way we could. As a general thing the fodder crop of the corn was wasted to a large extent, while to-day it is our best crop of fodder. All of you understand how this is as well as I do and a great deal better, perhaps. But I have given some attention to the raising of corn, and have got some information and experience so that I know what I am talking about when I talk about raising corn. I had six years' experience with it, and I raised my corn for from thirty-three cents to forty-two cents a bushel for six years in succession. I didn't guess at it either. I knew exactly what I did on the land and I charged for it. I went further and

charged the interest of the land. I charged for the manure that went on, and everything in that connection. I know, from that six years of experimenting that there is no question about it.

Now then, we want to save our money, so let us raise our own corn. That has been my hobby for the last fifteen or twenty years, that all New Hampshire and all New England should raise its own corn, and in that way I believe we can bring up the farming interests of New Hampshire.

But I am not here to take up your time to-day, for we have able speakers who are to entertain us and give us new ideas.

I will now introduce Mr. George S. Philbrick, of Tilton, the member of our board from Belknap county. He is a practical farmer and will speak to you upon "Helps and Hindrances to Successful Agriculture" and will be followed by others on the same subject.

HELPS AND HINDERANCES TO SUCCESSFUL AGRICULTURE.

BY GEORGE S. PHILBRICK.

When I was a boy attending school, there was a pond close beside the schoolhouse that used to take up our attention a great deal more than the spelling book. You know that our district schools commenced the first Monday after Thanksgiving. The ponds were generally frozen over at that time but were not always safe. We would gather on the shore and try the ice by throwing stones and sticks on, and if it held those, then pick out some small boy and encourage him to venture on. If it held him then the rest would go on and do the skating.

That is what the Board of Agriculture are doing to-day. The president has hurled some pretty heavy stones at you, and you have not shown any signs of breaking. Now they have encouraged me, as the smallest boy in the lot to come out before you, and then some of the larger fellows will venture on and do the fancy skating.

But we are not boys and girls let out to-day for a holiday. There is a very grave situation confronting you and me as agriculturalists in New Hampshire — a very grave situation. Look out over these farms up and down these hills and valleys, and what do you see? Old men, old women on most every farm. Your boys and girls as soon as they attain years of discretion, as soon as they begin to feel their manhood and womanhood, want to go away from the farm. They do go away, and you and I are left on the farms with this fact before us: that when we are laid to rest with our fathers, there will be none of our direct blood to take our places.

There are, in round numbers, in the State of New Hampshire thirty-two thousand farmers. Of those thirty-two thousand men who are gaining a living by the sweat of their brow, there are, perhaps, two thousand, who, at the end of the year, will have something to show for their labor. There are, probably, twenty thousand who will just barely make the ends meet, and there will be at least ten thousand men, in my opinion, who are tilling the farms of New Hampshire, who, at the close of December, will find themselves actually poorer than they were the first of January preceding.

So, I say, we are confronted with a very grave situation, and I am led to exclaim with the prophet:

“Is there no balm in Gilead; is there no physician there? Why then is not the health of the daughter of my people recovered?”

Why is it you and I tilling these farms year after year, and putting into them the best part of our lives, have, at the close of those lives, nothing to show for it?

It seems to me that the great trouble with all of us is that we try to cover too much ground. You know that “a jack at all trades and good for none” always carried with it a certain kind of contempt. Yet is it not true that in your farming operations you try to make jack at all trades of yourselves? I know it is true in my own case, and I know it is true of those near whom I am farming.

I believe that God created every man for a definite purpose.

I believe there is some one thing that you can do better than anything else. I believe that the duty of every man is, in the first place, to take an account with himself, and settle with himself, what he is good for, and then make that the business of his life to do that one thing. Look out over the world and see the men who have succeeded and are succeeding in the various walks of life, and you will find that they are men with one idea, men who have settled with themselves, early in life, what their work should be, and they have followed that with the whole bent of their energies and have succeeded.

We have sometimes thought that we could look outside of ourselves for relief, but I tell you, gentlemen, that we must look to ourselves. There is no antagonism, natural or artificial, between the various walks of life. There never has been a time in the history of the world when the common brotherhood of man is so fully recognized as it is to-day. But the trouble with us is that we have depended upon people in other branches of labor to do our thinking for us. They are not thinking for us, neither are they thinking against us. They are simply doing their own thinking, and the result is that they have thought ahead of us. And now to-day, all they ask of us is to come up out of these old ruts, and keep step with them in the march of progress, come up along side of them and be men.

I believe every man should make a specialty of something. I tell you that it does not make much difference what it is if it is in accord with your tastes and surroundings. Do some one thing and do it thoroughly. If you want to know anything about it, you should study and read, and in a little while you can know all that is generally known on that one subject. If you will go on experimenting and studying in that line, in a little while you will come to know more than anyone else on that subject. What does that mean? It simply means that you have become an authority to be respected and looked up to. It means that you have established a reputation.

And what does a reputation mean? Let me give you an

illustration. More than thirty-five years ago, out in Pennsylvania, there was a man by the name of Darlington, who made up his mind to know how to make butter and to make good butter. He made butter, and his descendants have made butter all these years, and to-day that butter retails in New York city, Philadelphia, and Boston for one dollar per pound. I went down to Boston a while ago and went into Quincy market, and I asked a dealer there, if he had some Darlington butter. He said he had, and I asked him to bring me some. I examined it — I think I know something about butter — and after I had tasted of it and examined it thoroughly I turned around to the man who had brought it, and said: "If I had brought you that butter, you would have given me but twenty-five cents a pound for it." He laughed and said, "Well, there are people that want that butter and are willing to pay for it." That butter is sold on its reputation. The Darlingtons have made butter, and they have educated the public taste to want their butter and no other. There are people in these cities I have named who never eat any other kind of butter.

You know how it is with flour that has acquired a reputation. People will take no other but that brand. You know that the St. Louis flour used to be the best on the market, and large quantities of flour were marked with that brand, when not one barrel in a thousand ever saw St. Louis, but it was all sold on the reputation of the St. Louis flour.

I know of a man that went to a merchant in his town, and wanted a barrel of flour of such a brand. As it happened, the merchant did not have that brand in the store, and so he sent him a barrel of flour of another kind. Soon they sent it back because it was musty and sticky, and the woman could not do anything with it. I happened to be in the store at the time and one of the partners turned around to the "jack at all trades" they always have in these stores, and said: "John, go and find a head of that brand, put it onto that barrel, and send it back." He did so. The next day, the purchaser came in and was asked how he liked the flour. He said, "Well, it is the best flour my wife ever had in the house."

That is what reputation means for you in any direction. I do not care what you are raising. If you have a reputation, it will sell you produce, and more than that you will get an extra price for it. You will not let these nobodies know what you are getting either.

There is another thing I wish to add, and that is, have thorough cultivation. That book you and I have been taught to reverence says: "The plowing of the wicked is sin."

I have seen a good deal of plowing that made me feel wicked, and if it had been done on my farm, it would have made me feel more so. We will plow over a piece of ground and not do it thoroughly, and we think when we come to cross plow in the fall, we will do better. But we do not, and we go on in this way, meeting difficulties from the start. Let me tell you that if you do not cultivate your land thoroughly, you will never meet with success. You will meet with nothing but defeat.

Now I want to say, gentlemen, and I want you to remember what I say here, that the world does not owe you a living, it does not owe you a cent; the world is not responsible for your being in it, it had nothing to do with your being here at all. But you do owe the world a life service; you owe it to yourselves, to your neighbors, and to your God, that when you come down to the further verge of life, the world shall have been better from the fact of your having lived in it. You can take out of life only what you put into it. The poetry of life is the living of it.

There would be a less number of failures, if there were more concentrated effort in one direction, let that direction be what it may. The farmer, too, should be sufficient unto himself. He should shine with no reflected light. Let him divest himself of these apparent hinderances of the day, use all the facilities of his time as a stepping-stone, and let him press towards the mark for the prize of his high calling.

THE PRESIDENT: I now have the pleasure of introducing to you Hon. Charles McDaniel, of Springfield, member of the

board from Sullivan county who will address you upon the same subject.

REMARKS BY CHARLES McDANIEL.

This subject is as extensive as our country from the Atlantic to the Pacific and from the Gulf to the Lakes and as varied as it is extensive, each state, county, town, and even each farm and farmer having helps and hinderances alike, and generally unlike in detail, especially the hinderances. It would require a small volume to mention even the major part. I have listened with pleasure as well as profit to the opening of this subject by Brother Philbrick and he has shown us that he is master of the situation. He is located in one, or on the outskirts of one, of our most thriving and popular villages in New Hampshire and has a surplus of the helps; while I am located in a purely agricultural town, with home market five, eight, ten, fourteen, twenty, forty, or one hundred miles distant. Consequently from our locations and surroundings we have different hinderances to contend with. I do not propose to attempt to give you an oratorical or flowery address for I could not if I would.

We are all in condition to avail ourselves of the helps or benefits of the agricultural press. There is not an agricultural paper printed, and hardly a political or religious one, that does not have one or more pages devoted to agriculture at the present time. By reading these publications, if we do not get any new ideas, the result of someone's experience is given that will help us to strengthen our conclusions upon the subject.

There are said to be three kinds of farmers: Those who sneer at agricultural papers; those who expect agricultural papers to think for them; and those who read agricultural papers for principles which they apply in the exercise of their own sound judgment. The first kind, we find using the same ruts that were used by their fathers and grandfathers, if not by their great grandfathers. The second class we find are taking it for granted that whatever is printed in their paper is

true and adopt the plan, without considering whether the method is suited to their condition and circumstances or not. They have the most perfect faith in the agricultural editor who does their thinking for them.

This reminds me of the good deacon who when reading the bible each morning after breakfast was in the habit of reading any selection where he chanced to open the book, that caught his attention first, believing that whatever was in the good book was literally true. One of his servants, a sort of a wag, arranged the bible so that when it opened easily, one of Mother Goose's Melodies was pasted in so conspicuously that it at once caught the deacon's eye, and he commenced reading as follows: Hi diddle diddle, the cow jumped over the moon. The deacon paused and remarked, "that was a big jump but by the grace of God I'll believe it." So some farmers are ready to believe any statement in print and govern themselves accordingly. But the third, and I trust the larger class, are those who read carefully, weigh well the arguments given and the conclusions arrived at, then use their own sound judgment as applied to their individual situations. Now we have improved machinery for doing most of our work. Upon my own farm, I have the ancient wooden mould-board plow as a relic of "ye olden time" and the national reversible sulky plow that is a pleasure as well as a profit to use; then compare these and the old spike-tooth harrow with the disc harrow; "Armstrong's mower," or the scythe and snath, with a six foot two-horse mower. The horse pitch-fork for unloading and the hay-loading field machine are helps to take the place of a certain number of men and boys; but here with all the improved machinery comes the hinderances, the lack of skilled men, at a living price to use these tools. Perhaps I hear someone say, "help yourself." That's all right on a small scale, but a small farmer on a stock farm cannot afford all these implements. So here comes in coöperation, one of the grange principles, instead of all being independent some of us have to be dependent and share the ownership of certain farm implements. Formerly, when boys were plenty on

every farm, and stones equally plenty, one had many fences made that now are useless and like bad roads are expensive to keep in repair or to use. So of our crops, we must adapt ourselves to our circumstances, or in other words avail ourselves of the opportunities that are before us.

In regard to stock, whether dairy, beef, sheep, or poultry raising, we can boil it all down to "care and breeding" as helps or hinderances to successful agriculture.

TAXATION.

No one, if sane, really expects to escape entirely, taxation; but farmers thus far have had a large share of taxes to pay, simply because they suffered laws to be so made as to compel them to do it. This surplus of taxation upon agricultural property may be small for the individual farmer, but is very large in the aggregate. It is not simply a dollar extra on a horse or ox, but when taken upon a whole herd or farm it becomes burdensome and a hinderance year after year. Now our state laws are doubtless superior to many other States but it is impossible for any board of assessors to tax justly as to the income of property, for instance in my own town experience, a man's tax on his dogs was seven dollars and on his cows five dollars per year; upon a horse used for family purposes, as going to the store, post-office, and church was a tax of three dollars, while upon his flock of twenty-five sheep, one dollar and a half, that gave him a gross income of \$150 or a net income of \$75, while there was not a visible dollar's income from the horse. Then we might go through the lists of farms and mills, stock in trade and money at interest untaxed, to say nothing of the other invisible and untaxable property, while the farmers' property, visible, is fully taxed and sometimes doubly taxed, as in case of mortgages.

Here we are brought to the helps of organization among our farmers. I have spoken here in years past about the work of the Grange, during the past year the farmers of this State, or in a portion of it, have awakened to their own necessity of organization and twenty-five new Granges have been

formed with a charter membership of at least 750, in addition to a round thousand who have become affiliated with the former or older Granges. Farmers, Patrons of Husbandry, the question comes why this special increase? First, I may say the State Grange elected Brother Bachelder as my successor and he has devised the means while the farmers had previously seen the necessity of organization. Second, the work done at the last session of the Legislature by which the farmers thereof, through organization with Hon. J. G. Tallant as president, proved that our work must be carefully planned, thoroughly studied and investigated, and bills carefully drawn before being presented for action.

But, Mr. President, I am aware that I am talking of helps that may seem far off to some present and will conclude my remarks by an allusion to one further help that needs the coöperation and support of the whole agricultural community. I refer to our State College of Agriculture and Mechanic Arts. Through the united efforts of this State Board of Agriculture, the State Grange, the farmer's council of the last Legislature, and the recommendation of His Excellency Governor Tuttle, the donation of the late Benjamin Thompson of Durham to the State of over \$400,000 was accepted in accordance with the provisions of his last will with codicils attached.

The donation was to be kept on interest twenty years before becoming available for use unless the State should at once provide for the erection of suitable buildings and surroundings which must be furnished from other funds than of said estate. Now from the combined efforts of these organizations, the sum of \$100,000 was appropriated to aid in the erection of sufficient buildings and appliances; in addition to this was the real estate at Hanover which has been disposed of, giving us a total of about \$163,000. The board of trustees have commenced and have well progressed in the construction of the essential buildings to commence real school or college work there in September, 1893.

These buildings consist of the main building, estimated to cost, including extra work on foundation	\$59,000
Science building	25,000
Workshop, boiler house, foundry, coal sheds, etc. .	20,000
Experiment station, including farm barn and other buildings	24,000
Land bought, water-works, heating, piping, wiring, architects, and other expenses	32,000
	<hr/>
	\$160,000

This to some may seem a vast expenditure, but your trustees and committee, the board of control and executive or building committee have considered it to be their duty to build for permanence and durability and have accordingly had their plans and specifications made in the most thorough and substantial manner and the work under the most careful oversight or superintendence. Mr. Lowell, a practical man, watches all the details upon the main and science buildings and is aided by Professor Kingsbury on the workshop and foundry buildings.

Professor Whicher is directly and continually in charge of the experiment station and farm buildings. These buildings are all of stone and brick except the barn, and we especially invite all interested in any way whether as a taxpayer or patron to visit this site and examine for yourself.

Now for a conclusion. This farm being virtually one of the abandoned farms of New Hampshire, located on the Boston & Maine railroad, and having a diversity of soil and broken surface, and on which is now located our State Agriculture College, we predict that it will prove to our future successful agriculture in New Hampshire one of our greatest helps.

The will has been accepted, the bill has been passed authorizing the carrying into effect the provisions of the will, and now, patrons and friends, please prepare to send your "Williams" and "Marys" to this agricultural and scientific school.

THE PRESIDENT: I have the pleasure of introducing Hon. Mortimer Whitehead, lecturer of the National Grange.

ADDRESS BY MORTIMER WHITEHEAD,

WASHINGTON, D. C., LECTURER OF THE NATIONAL GRANGE.

Mr. President, Ladies and Gentlemen:

Certainly it gives me a great deal of pleasure to meet you here to-day under such pleasant circumstances. Although I am quite a distance from home, I am not a stranger.

It is known to most of you that I myself am a farmer; and just as you farmers are here by the Atlantic, just so we have the old Atlantic washing our shores. We are all interested in each other and in the common cause of agriculture.

The subject I find that has been assigned to me to talk about this morning is "Helps and Hinderances to Successful Agriculture." Now that covers a great deal of ground, and it is a subject very much discussed. You have already heard some very good talk upon that subject, and have had some very good suggestions made here to-day. I will try to add a few words to what has already been said and so well said.

In thinking over the subject, coming along on the cars this morning, I thought of some of the hinderances, and I tried to think of some of the helps. In thinking of the hinderances first, of course I got considerably under a dark cloud, and I began to get the blues, as there seemed to be so many of these hinderances, and it seemed as though the dark cloud could not be broken. But when I came to search for the rays of sunshine that I believe are piercing through the cloud, I certainly felt that there was some sunshine in our occupation at this time. The future is bright. I believe we are on the road to overcoming a great many of our hinderances that have kept us and our profession in the background. Just as the sunshine has always followed the rain; just as there are many more clear days in the year than stormy days, just so I believe it is with us. There are a great many more helps than hinderances to the farmers of this country.

Among the hinderances to successful agriculture, nowadays, is the fact that we farmers have not fully kept abreast of the times in which we live. We are some of us using the old-fashioned implements and following the old ways of cultivating our land and pursuing the old business methods, relying too much upon bone, muscle, and fat, and not so much on the brain as we ought. On this account many of us have been left behind.

Then, too, we find that matters of legislation have gone against us. Farmers have not interested themselves enough in legislation. Other people have. They have looked after their business better than we have and they have had the benefit of legislation in their interests.

I am not one of those that say that we ought not to expect the government to do anything for us. I believe this government was made to help every man, woman, and child in it; because it is our government and we make our government and our country just what we have a mind to. And the great majority of the people of the country being farmers, of course we are specially interested in making a government and laws that will help us.

If you farmers want a new town hall, or a new church, or a new schoolhouse, or improved roads in your neighborhood, of course you depend upon yourselves, but you certainly do it through the government. You can do it that way better than for each individual to try to do it alone. So I believe on that same ground, that all the people can help the people, better than any one individual can help himself. So I believe in the farmers taking a proper interest in the politics of their country and in the affairs of their country and by legislation remove many of the hinderances that to-day surround our occupation.

We have bad roads. We ought not to have them in this country. It is a drawback to us.

We are far away from the post-office and do not get enough newspapers to keep us in step with the world. We want to keep right up with the times, as has already been said. To do that we want to take more newspapers.

We want to have removed the hinderance of unequal taxation. Farmers grumble a good deal about the taxes; but farmers do not complain about paying their own taxes, they complain about paying the other fellow's taxes. That is the trouble with the farmers to-day. We find the farmers in the United States are paying eighty per cent of all the taxes paid in this country. You know that the more money a person has nowadays the less taxes he pays. He evades it by legislation and by a great many sharp, tricky ways. I do not like to call hard names, but when I hear of rich men and millionaires, who try to get the benefits of this government without paying for them, it reminds me of these tramps that go along the road, without doing any work but living off of other people. We call them dead beats. They want to have all the benefits of this great government of ours without paying anything for it. That is the very thing that very many of our wealthiest men to-day are doing.

That is one of the serious hinderances of the farmer. We are bearing not only our fair share of the burdens of government, but the burdens that these other people ought to carry, but which they dodge.

Other hinderances that we have are confined wholly to the farms. We have new varieties of weeds and fungi to injure our crops; we have insects upon our vegetables and fruits. They seem to be increasing as we improve in our agriculture. I think it was Henry Ward Beecher who said once upon a time, that he thought the best way to get rid of the thistle was to invent some way to use them and make them valuable so they would be cultivated, and he thought the bugs and insects would go for them and we would get clear of them after a time.

There was a time in this country when we had comparatively little disease among our stock. I know that has extended as the herds have increased in their size and value. Perhaps it is a provision that our good Father has made to keep the equilibrium.

But we must meet those hinderances in order to carry on

successful and profitable agriculture. How can we best overcome these hinderances and bring about those things that are necessary? How can we best of all accomplish that object that has been referred to by some of your speakers — keep the boys and girls at home on the farm? If we kept all the boys and girls on the farm, what would become of the city, of the professions, and of the places of trust? It has been said that if you put a wall around the cities of this country, so that no one from the country could enter, in less than two generations, the cities would be all gone. The cities are replenished by the people, the boys and girls, that move from the country to the city.

But we need a great many of these boys and girls on the farm. How shall we keep them there? I think there is a way to answer that question and it is a serious question. The last census shows us that the increase of the population of the cities and villages was three times as great in the last decade as in any other ten years of our country's history. It is terrible, when you think of it.

In my opinion the way to remove this hinderance, the way to keep more of the boys and girls upon the farm and the way to overcome most of these hinderances we have been speaking of, is to make farming pay better. Just as much as you can make farming pay better, just in that proportion will the bright boys and girls remain upon the farm and the farms become more prosperous. I have no doubt about that. Our American boys and girls are not lazy. They go around this earth and into all parts of it. You will find them as business men in the uttermost corners of this earth. Pressing business men they are, making their fortunes. It is not because they are lazy or afraid of work that they leave the farm. It is because there are too many of these hinderances to agriculture. Just now the old farms do not pay as well as most of the other businesses and callings do.

So I say, let us remove the hinderances; let us increase the number of helps. Then we will prosper and our night will turn into day.

There was an old rule that Ricardo laid down which was this: "Cut off your losses and let your profits run on." Cut off your hinderances and let your helps run on. Do everything to make your farming successful; increase all the appliances for farming. Make your farming more successful, and you will make it more profitable.

I believe, and many other farmers believe it too, that the first step towards improving the condition of the American farmer is a thorough organization as Brother McDaniel has already so excellently told you. We used to live along alone, and so did other people live comparatively alone. But in these modern times we must use all the appliances of the day in which we live.

Organization was used in our country long before the farmers commenced to use it. You know as well as I can tell you, that every profession, every class of men, the merchant, the lawyer, doctor, school teacher, and laboring man all had the help of organization; but the farmer until lately had nothing to do with it. He worked on the farm sixteen hours in every week day. He was the living example of the workings of the eight-hour principle — eight hours before dinner and eight hours after dinner.

So the farmer hardly knew what was going on in the world, for his life was spent mostly on the farm alone. The principle he went on was: Every farmer for himself and the devil take the hindmost. The rest of the world had the benefit of organization because in union there is strength. The farmer did not appreciate that principle. He did not understand that two farmers could pull together as well as two horses could pull together; and if two farmers can pull together, a dozen farmers can. It is just like the old Atlantic in front of us. You remember the story about Mother Partington. Mother Partington had never seen the tide rise until she went to the seashore one time. Then she saw it creeping up on the beach and creeping up on the beach. What did she do? She went and got her broom and tried to sweep back the whole Atlantic Ocean with her old broom. That is just the

position the farmer is in to-day. He thinks that by himself, by his own individual labor, he can sweep away the hinderances to farming. But that is not so. He must organize and become united and obtain the strength that always comes from union.

Suppose that the Queen of England should make the attempt to conquer us and she should send over a large squadron of vessels which would come over, some along the coast of Massachusetts and some along the coast of New Jersey. We would be very patriotic right away, of course we would, every one of us. But would we go into the house and get out the old shot gun and the old army musket that grandfather had and go each one in his individual capacity and try to drive the enemy from our shores? Is that the way we would do? No, that would do no good. There would be a company formed in every town and a regiment in every county and those regiments would form an army corps and you would help us in Washington and we would help you here and so we would knock Queen Victoria into the Atlantic Ocean.

We want an organization just as complete as the railroad companies have, just as complete as the manufacturers have and all these other classes of men that have organizations in their own interests. We must meet organization with organization. When we can unite with these other organizations, we should; but when they go apart from us, we should oppose them and overcome them if we can.

So I say organization first and after organization, education for the farmer.

I know we have had some benefits of education. We have had agricultural papers and various things to help us in that line. But for all that, farmers do not depend enough on their own brains and too much upon other people's brains. Your honored president brought out the thought about minding our own business. That is a fine idea. If we do not do that, we will be left far, far behind.

We have worked with our hands, but we have not used our brains as much as we ought. We have depended too much

on somebody else's brains and the result is that legislation has to some extent and to a considerable extent gone against the best interests of agriculture.

I remember when I was a boy the idea prevailed that the great thing the farmer needed was muscle. The farmer who could do the longest and hardest day's work was the man that would succeed. This impression was aided by the agricultural papers.

My father commenced to take the "American Agriculturalist." He got the numbers bound and kept them for several years. I have kept them since. It was a picture paper. I got so I could look at the pictures in this bound volume, and a little later I got so I could read a little from it. This paper encouraged the idea that the farmer should have more muscle than anything else. Every month that paper would tell us of the work that ought to be done that month. It always laid out enough work one month to keep a farmer busy six months.

January and February, during these long winter evenings see that the boys are not wasting their time. Keep them busy making baskets, etc., getting ready for the busy season.

So these agricultural papers prove what I have said, that it was the almost universal idea that the farmer should have more muscle than anything else. They never said a word about the boys spending their winter evenings in study or in the use of their brain. By the way, there are thousands of farmers who have sent their boys to college. A farmer will work hard to give his boy a good education, to fit him for college and then to send him through. What becomes of that boy? Is he educated to become a farmer? No, he is to be a sharp, tricky lawyer, or a doctor, or a preacher, or something of that kind. Of course, it was thought a boy who is to become a farmer does not need this education — he needs nothing but muscle. But times are changing. These boards of agriculture and institutes are among the modern improvements. We are learning to discuss these things among ourselves.

It used to be that when we held a little county fair or a little

Sunday-school picnic we had to invite some lawyer or some one of that sort to come and speak to us. When speaking to farmers, these men would tell how they were born on the farm, and how they loved the bright green fields and the smell of the new-mown hay and so on. One of them when speaking to an audience of farmers in the State of Ohio said: "It almost might be said that I grew up between two rows of corn," whereupon an old farmer shouted out: "A punkin, by gosh." They usually commence with relating the circumstances of their boyhood: "In my early days I was on the old farm and I toiled like one of you, but fate destined me for something else and I was obliged to leave the farm and go into new fields and new occupations. To-day, however, I am looking forward with great anticipations to the time in the great distant future when I can live again in the green fields and under the blue skies. What should we do without the farmers? They are a necessity. It is you farmers with your strength and your muscle that have made the wilderness blossom as the rose. What would we do without you? You are the bone and muscle of this Union." Can you remember a single one of them that ever said anything about the brains of the farmers? Not one. They think they have all the brains; they have got a patent right on all the brains there are in this country and we must be the draft animals for them. According to them the glory of the farmer is in his muscle. Your horses and your oxen have more muscle than you and so they must be better than you. Shall the American farmer believe that? No. The Creator has given him brains and one of the most certain ways in this world to remove the hinderances from farming is to teach him to use his brains, to guide the work of his hands by an intelligent and cultivated brain. Then he will succeed.

Now, in the past, we have depended upon our muscle and upon other people's brains, and we have got left, badly left, left way behind in this age of progress and in this age of brain. I do not say exactly that we have gone behind, because we have made progress; but other people have made progress faster than we have. If I wanted to go to my New

Jersey farm I could start off and walk there along the road or on the railroad track and after a few days of walking I would undoubtedly reach my destination. You might at the same time I started, go to your own home, have a good night's rest and another good night's rest, and then step on board the cars and with a ticket that you bought, you could outstrip me. You are going by brains and I am going by muscle and you leave me behind. That is the idea.

The farmer wants to realize that he lives in a day of brain power, in the last part of the nineteenth century which has exceeded all other centuries in the progress that has been made, because this century, beyond all other centuries, is a century of brain and organization.

So the first great object is organization and the second great object is education. By education, organization, and coöperation, we can get improved machinery, we can learn about new methods of agriculture, we can learn how to keep the fertility of our soil, learn where the best markets are located and how to reach them, and thus receive a fair share of the profits that are on agricultural products. Now, other men are getting these profits. You go by a beehive and you will see the bees hard at work. They think they are working for themselves, whereas really they are working for us and when we want it we go and get the honey. If the bees make too much fuss we puff a little smoke in their faces. Just so there are classes of men who are thoroughly organized and combined that are gathering the fruits of the farmers' toil. They look through their plate glass windows at the toilers and say: Ah, our bees are doing first rate. And if we, their bees, grumble or complain too much, they find some way of puffing a little smoke in our faces.

We have been studying in our grange meetings now for several years how the wealth of the country is going into the hands of the rich people. Do you know how rich Mr. Gould is today. I will give you a little illustration of it. If good old father Adam, when he and his wife were turned out of the garden of Eden and were compelled to work, had at the end

of the first day laid aside one dollar, saved it up, and if he had worked every day from that day to this and saved up a dollar each day from that time, he would not have as much money as Jay Gould has to-day. Somebody has obtained some honey. Statistics prove it.

These millionaires through legislation and using their brains in their line, have taken from the laborers of this country much that rightfully belongs to them and we need education and organization to counteract it.

It was George Washington who said, he that caused two blades of grass to grow where only one grew before was a benefactor to his country. We have taken George Washington's advice, and through agricultural societies and through agricultural papers and the other educators that we have, have increased the number of bushels of grain and the number of blades of grass raised in our field. But there has been another class of people, well organized, using their brains, who do not work much, who do not add a dollar to the wealth of this country, but who take the extra blade of grass and the extra bushel of corn away from the farmers and use it to increase their own wealth. We need legislation and organization to counteract this.

You who read the papers will remember the very severe fight we have had at Washington over the anti-option bill, a bill which was framed to put a stop to the gambling in the products of the farmers. In the city of Chicago, they have sold in one season seven bushels of wheat to every one that was raised that year. In the city of New York, they have sold on the cotton exchange, ten bales of cotton to every one grown. Supply and demand had little to do with it. It was the gamblers who had control of the markets of the country, robbing the farmers and making millions to add to their other millions of ill gotten gain. This has got to be stopped.

We rejoiced when Congress put a stop to the Louisiana lottery because that lottery was taking millions of dollars out of the pockets of the people, but the people lost it voluntarily, as they were the ones that bought the lottery tickets and they

were the ones that lost. But this gambling in bread stuffs has robbed the farmers of millions of dollars in the last few years without their consent. There is no doubt about it. It must be stopped. I wish you could have all been at Washington this last winter and seen the fight we made there. Mr. Hatch, chairman of the committee on agriculture, gave us plenty of time for a hearing. Every day for nearly three weeks, from ten to eleven, that bill was before the committee. That bill had the support of the National Grange and every Grange in New Hampshire and the United States signed memorials and sent them down expressing their favor of the bill and their desire to have it passed. It would have done you good to have gone into that committee room morning after morning and seen it filled with the best judges and lawyers in Chicago, New York, and other cities, and with representatives of the farmers who came there to try to get a law passed to stop this gambling in the products of the farms. We got it through the house. We had been trying several years before we got it that far. The bill, however, was lost in the senate. Now look you, a Democratic house has passed that bill for the farmers, but a Republican senate has refused to relieve them of one of their hinderances to successful farming.

We have also, for a long time, been working to stop the adulteration of hog products and the use of diseased hogs. Farmers should organize to protect their interests in this respect and to stop this drawback. I have seen teams going around gathering up these hogs that have died with cholera and they say they use them to make soap. But that is not so. Those hogs go into compound lard. That is what is done with them. And this compound lard is put upon the market in competition with the pure lard. That hinderance should be removed and farmers should organize for this purpose as well as for the removal of all adulterations of food. Every bit of it bears hard upon the farmers and is a hinderance to his success and we have no right to submit to it.

First by organization, then by education, and then by minding our own business, as your president said, we will remove all these hinderances.

I want to say a few words upon another point in this same direction of legislating for the farmers and that is in regard to legislation affecting the tariff. Now I am not going to make a free trade speech or a high tariff speech. Farmers can find in the tariff things to help either side and perhaps it is pretty hard to say just what is right. There are very grave questions in regard to the tariff in this country and the politicians are fooling some of the people. The tariff has been discussed ever since I was a boy. In one place the Republican speakers will say that the tariff has been reduced and in another part of the country they will say that it has been raised according to the people they are talking to.

There was an Englishman that came over to this country. He was quite a hunter and had all the apparatus for hunting and starting his game. At one time he employed a farmer's boy for a guide upon a hunting expedition. The Englishman was mounted on a very nice horse, while the boy was on an old farm horse. But there were bright sharp eyes in that little boy's head. Before they had gone a great ways the boy discovered some game. Immediately the horse went down onto his haunches. "What kind of a horse have you there?" "Ah, said the boy, there is some game around here and the horse don't want to go by," and sure enough, game they got. This happened several times more. The boy said the horse never made a mistake. At last the Englishman tried to buy this horse, finally an exchange of horses was made and the boy got one hundred dollars in cash to boot. The boy mounted the thoroughbred while the Englishman took the farm horse. By and by they came to a creek they had to cross and in going down into it, the Englishman drew up his heels against the horse's sides. Down he went as he had done with the boy as that was the signal that the horse had been trained to obey. The Englishman accused the boy of cheating him, but the boy answered: "I didn't tell you all that horse can do. He is just as good catching suckers as he is rabbits and quails."

That is the way with the tariff, as it is handled by politicians. It is just as good to catch suckers as it is rabbits.

I want to say to you again, be educated and be organized. It is in that way that you can best handle these questions. I want to say to you also right here that the Grange has both Democrats and Republicans in it — thousands of them and hundreds of thousands of them. It does not try to make everybody a Democrat or a Republican; it does not try to make everybody a free trader any more than it does to make everybody a high protectionist. Not a bit of it. I will tell you what the Grange does do. It brings the farmers together but the politicians keep them apart. They divide the farmers into Democrats and Republicans and they put the Democratic farmer up against the Republican farmer and vice versa. But the Grange brings education and organization. It keeps us together. It has the same old plank that our forefathers had, God created all men free and equal. That is the idea in the constitution. All citizens shall be equal before the law. That means the tax laws. It does not mean one tax for the rich and another tax for the poor and the laborer. It means equal before the tariff laws. It does not mean one kind of a tariff law for manufacturers and another kind for farmers. The farmers are just waking up to this and they came to Washington and demanded their share of legislation in regard to the tariff and they got it or some of it. They said. If there is going to be a tariff bill passed, we want to be protected as well as the manufacturer. If there is going to be a reduction in the tariff we want to share that reduction.

There are four times as many farmers to-day engaged in raising wool as there are manufacturers engaged in manufacturing the cloth and the farmer does not propose to have free raw material, which he has to sell and a protective tariff at the same time on the manufactured articles which he has to buy. The Grange said to the farmers, to the Democrats and Republicans alike: If there is to be a tariff, we will have some of the products of the farm protected. The result was that the farmer received a tariff on raw hides and other produce and to-day the farmers have more tariff protection than they ever had in the history of this country.

We have not had the protection from legislation that we might, and some people say: Oh, the farmers will submit to it. Perhaps we do, but we are fools to do it.

As I was saying, the result of this demand upon Congress is that we have some protection and the result of that is that we have better markets for our potatoes and our apples and many of our other crops. We have a tariff on potatoes of thirty cents a bushel and that keeps them from coming in such large quantities from Canada. We asked for a tariff on apples and we got twenty-five cents a bushel on them and that keeps out of our markets the apples from Nova Scotia. It is right for the farmer to have a tariff of twenty-five cents a bushel on his apples, if it is right for the manufacturer to have a tariff on every yard of cloth he manufactures. It is right that the farmer should have a protective tariff on his produce, if it is right that the manufacturer of iron and steel should have such a tariff on his goods. We have had eighteen million dozen of eggs come to this country from Canada. The present tariff law put a tax of five cents a dozen on foreign eggs and the result was, that the first year that we had farmers' protection there were only about one million dozen of foreign eggs shipped into this country. On barley we got the tariff raised from ten cents to thirty cents. We have as much right to have a tariff on that as the manufacturers have to have a tariff on their goods.

But there was some other legislation that we got that was of advantage to the farmer and that is reciprocity. I tell you what it is, the Grange filed a caveat on that seven years ago. Look at the proceedings of the National Grange in Michigan about seven years ago. The question came up as to the prohibition of American pork and beef from the markets of the Old World and it was decided that something would have to be done. The question was referred to the committee on foreign affairs and they recommended that the matter be laid before the committee of agriculture in Congress and before the department of state. So when Mr. Blaine came into power the matter was laid before him. The result was that the gov-

ernment was placed in a position where it could say to the German, "You have prohibited our pork and beef. If you do not let in American pork and beef we will put the biggest kind of a tariff on your products." American pork and beef were allowed to enter Germany. The same thing was said to the Frenchman, and the result is that to-day the American hog can go around this earth. That is a kind of free trade. It is a free trade that you get some pay for.

It is just the same if I had a nice pasture and a herd of cows and you had the same. Supposing I should go to you and say, Now, I want you to let down your bars so my cattle can pasture in your fields, but I will keep my bars up. Would you do that? No. But you would agree that every time I pulled down a bar, you would pull down a bar. That is what reciprocity is.

The organization of farmers has made the agricultural department what it is. It used to be a little bureau, but to-day it is one of the great departments of this government with a farmer and a member of the Grange at the head of it. And this department of agriculture—we farmers feel the effect of it. It has saved millions of dollars more than it has cost every year. There have been insects, etc., at work destroying our crops which the department of agriculture has crushed out entirely, and other great hinderances to successful agriculture have been checked. They started the spraying apparatus which we use to spray our crops in New Jersey and by which means we save them. And to-day thousands of neighborhoods are getting the weather forecast. Signals are flying all over our land warning the farmers of what the weather may be. And now this same department is issuing to the farmers of New Hampshire and of the other States a weekly weather and crop report, so that you can know what kind of weather there has been all over the United States during the past week and how the crops have been affected. This gives the farmer a chance to know what the probable state of the market will be.

We can do these and a thousand other things of equal value when we become organized and progressive farmers and have our fair share of legislation along with other people.

In this same line of legislation there are other things that should be done for the farmer. He should have his mail delivered right at his door. As it is, the man in the city has his letter placed right on his desk by the government, whereas if that same letter had been sent to the farmer it would have been left four miles away. In England they have had rural free delivery for nearly a hundred years.

Then again we want better roads. We believe that the farmer ought not to pay for all the roads in the country as he is doing to-day. They are not used exclusively by the farmers, but the city people use them and wear them out too. We believe that the State ought to help build some of these roads.

We are working along on all these lines to-day.

I want to say in conclusion, what I said in the beginning. There is a great deal more sunshine in the future outlook of the farmer than there are clouds. But we must depend upon ourselves to bring these things about. Heaven helps those who help themselves. So you all want to help this Board of Agriculture, you want to all help the Grange to remove the hinderances of farming and increase the benefits and advantages. We want the institutes, the Granges, and the colleges to help us get these things, and we can get them if we will. We are going to have the telegraph and telephone handy and not let the people of the city monopolize all of these conveniences of our civilization. We are going to have all the advantages of the city right on the farm, without many of the disadvantages that our city friends are living under now. The tide is going to turn the other way.

THE PRESIDENT: The meeting will now stand adjourned till two o'clock this afternoon.

AFTERNOON SESSION.

The afternoon session was opened promptly at two o'clock with a largely increased attendance, and the exercises were resumed as follows:

THE PRESIDENT: We are much gratified this afternoon to have with us the chief executive of the State and I now have the pleasure of introducing to you His Excellency Governor Tuttle.

ADDRESS BY GOVERNOR TUTTLE.

Mr. President, Ladies and Gentlemen:

It has never before been my privilege to attend one of your annual field meetings. It was with much regret that I was compelled to decline your kind invitation last year, and it affords me much pleasure and satisfaction to be with you to-day.

I am exceedingly interested in the good work that the State Board of Agriculture is doing for New Hampshire. Your last report is a volume that every farmer in the State should possess and is interesting and profitable reading for all. The illustrations are a valuable addition to the work, advertising, as they do, some of the beautiful lakes which lie scattered throughout our State and which add so much to the beauty of our scenery.

Our people are beginning to realize what a treasure they have in the hills, the valleys, and the lakes of the old Granite State. Hundreds of our farmers add materially to their income each year by converting their homes into boarding-houses during the summer months. Others find a ready market for their farm produce near at hand among our numerous summer hotels.

It is gratifying to learn that many of our deserted farms are being converted into summer houses and boarding-houses. It can no longer be stated that New Hampshire's population is decreasing and that her farms are abandoned, for statistics tell a different story.

I shall not speak on the subject of agriculture, as I am a farmer of the old school, all of my experience in that line dating back more than forty years. You have an opportunity to-day to listen to many able men and my only regret is that I

cannot bring to your attention any subject that is especially new, nor any suggestions that you may not have heard before. Over and over again have the beauties and the possibilities of New Hampshire been recounted in your hearing. You have had eloquently pictured before you the prosperity and greatness of the little State we all love so well and the honor of which we stand ready to defend from all aspersions that may be cast upon her.

To us, New Hampshire means more than a name. Rather it signifies the highest order of social happiness, of business thrift, and of official integrity. No stain rests upon the name of our State. Our courts are pure, our laws are impartially enforced, and our people always insist that those who represent them shall constantly keep in mind the welfare and integrity of the commonwealth. Proud of our past, we are equally content with our present and sanguine of our future. As we look upon Mount Washington and Moosilauke and Monadnock; as we feast our eyes upon the beauties of Winnepesaukee and Sunapee and Squam, their placid waters and picturesque shores; as we contemplate the fertile valleys of the Connecticut and the Merrimack and the shores washed by the Atlantic; as we listen to the music of the spindles on our water courses; as we recall our churches, our schools, and our homes; as we think of the prosperity, the thrift, the nature, and the contentment of our people, surely every heart should go out in gratitude to God for permitting us to live in and represent a State so good in its material resources and so blessed with all the privileges and opportunities of the highest type of American citizenship.

I thank you all for your courtesy and attention. Let us be true to our State, loyal to our laws, and honest and faithful in the discharge of our own individual obligations, and in this way we will prove ourselves to be worthy sons of a historic and grand old commonwealth.

THE PRESIDENT: We have with us to-day one who is no stranger to the New Hampshire farmers and it affords me

pleasure to introduce to you Prof. I. P. Roberts, of Cornell University, Ithaca, N. Y., who will address you upon the subject of "Agricultural Education."

AGRICULTURAL EDUCATION.

BY PROF. I. P. ROBERTS OF CORNELL UNIVERSITY.

In the early days when steam cars were mute and when as yet the untamed lightning had not been taught to pull the plebian street car without a thought of striking and tearing up the track, the American schoolboy had received a fairly good agricultural education; he early learned how to use the axe, auger, and saw in the most effective manner. Could he not bend the bow and curve the yoke and make the rope that bound the festive steers to his home-made sled? Did he not see in every crooked tree rooted the grand possibilities of a couple of dandy sleigh crooks? Did he not feel himself a man when he carved from the second growth tough and stubborn hickory that thing most difficult to make, a crooked axe helve — a helve so deftly shaped and nicely hung that every tingling finger nerve knew just where the sharp and glistening edge was placed?

Did he not know the time and haunts of coons, squirrels, and woodchucks? Did he not know the birds by name, and when they came and went, and where they nested? Did he not know every tree by sight? Did he not know every herb and shrub by name, and which was good for all stings, which for ivy poisoning, and which would cure the ague? As he grew up amid his rude surroundings he learned the common names of all the things with which he had to do, and became an expert with every tool and implement of agriculture.

He made with his own hands the things of use and pleasure which he desired.

His sister shared his sports and entered into all his plans, and she, too, grew up strong of body and full of resources, fit matrix in which to form statesmen and patriots. Their

English was always strong and their words forcible if not polished. Their arithmetic they carried in their heads and it required no pencil to make it available. Many of these farm boys and girls were but illy equipped for the intensified life into which they drifted in after years; but it cannot be said that they had not, according to their needs and time, a good education in agriculture. As by magic all this was changed. That oft repeated call for six hundred thousand more took from the fields vast numbers of these brave boys. Inventive genius saw its opportunity and their places were more than filled on the farm by the tireless mower, binder, and thresher. Those who returned to their homes in 1865 found farm life greatly changed. Money in great abundance, money made from his shirt, cheap money, cheap bows and arrows, sleds and whistles, dolls and balls. In every little village flourished a five-cent store. Basements were filled with cheap things to sell cheap, things made by "you touch the button and the machine does the rest." Everybody made money, everybody bought stacks of cheap things for the children which served the purpose of pleasing them until bed time if happily they did not fall apart in getting them home. With this cheap diversion one could find but little fault if it had not resulted in depriving the children of that healthy physical and intellectual growth which comes, and which alone can come, from healthful desires and the gratification of them through individual effort. The old has passed away.

What have we to substitute for it? The boy has his ball, bat, and sled ready made to his hand; the girl her doll, her dishes, and her baby wagon. Is it possible to substitute something for them? Or rather add something to them which will interest while it educates the head and trains the hand? It appears to me that it is not only possible but highly desirable. What shall it be? Who will bring it? How will it come? It must come through the primary and secondary schools, because a good structure cannot be reared without a good foundation. The school teacher must bring it to every schoolhouse and academy in the land because the

learners cannot be brought to a single centre. The teaching must be done in many places.

But a small fraction of our children will ever take a four years course at college. Since no agriculture is taught in the schools, therefore almost no agriculture is taught in the nation. If one looks carefully into what is taught in the schools he will wonder how any boy ever thought of going into an agriculture college. So far as I can learn not a single word of scientific or practical agriculture is ever taught in the schools. Whoever heard of the laws which govern the successful cultivation of potatoes being taught to farm boys at the common schools? Or whoever heard of a teacher who explained to his pupils how all crops, all plants in dry summer weather, would utterly fail if it were not for the law of capillary attraction? A child of ten can be taught how he can make this law serve his purpose and obey his command, just as well as a man of thirty. Has there ever been anything said in our schools about depletion of soil fertility or of how to recuperate soils? Is there a single schoolboy in all the land who has ever heard from his teacher anything about the source of nitrogen in plants or how the legumes form a home for countless microbes which have the power, in some mysterious way, of taking free nitrogen from the air and giving it to their host for sustenance? Sometimes a little botany is taught, but it is never put to any useful or practical purpose. Perhaps a farm boy brings a little moss to the teacher who opens a book and informs the expectant child that it is a *lycopodium lucidulum*. This is as lucid and clear as mud to the anxious waiting learner. Let me repeat my questions. What kind of agricultural teachings can be substituted for the old? That which teaches that there must be more of the brain and less of the hand; and yet hand training or facility should always be made a prominent part of our educational system. We have been educating one man's hand and another man's head. This too often results in producing two monstrosities, and the one despises the other and the other hates the one. The strikes are largely due to this vicious system of developing and

training but half the inborn possibilities of the boy. How much longer will we train three fourths of our population to be mere beasts of burden? Is it possible to combine at least a fair degree of intelligence with these callings which of necessity require a considerable amount of physical energy? I think that we all agree that the better a man has been trained intellectually, the better use it is possible for him to make of the forces of nature and thus get clear of much of the work which requires little else than the expenditure of human muscle. I say the better use it is possible for him to make of these forces; but, unless he has had a reasonable amount of manual training, he cannot make the least use of his intellectual acquirements. Nearly every full professor in the technical courses at Cornell University has some sort of a workshop connected with his classroom in which, with his own hands, he repairs and frequently makes much of the apparatus which he has occasion to use in the classroom shop. Why cannot the same practice which we find so helpful to the student and the teacher in the college be applied in a modified form in the schools? I have said that the girls and boys of a half a century ago made things that they desired and in so doing acquired judgment and self-reliance, and secured a large measure of happiness. But you say we have few or no teachers who are capable of doing this work and it will be expensive. All this is quite true, but supply soon fills all demands; teachers can soon be trained to this primary work, and as to expense, I ask, are cattle, sheep, stock, and bank accounts worth more than boys and girls? Again the doubter says, that schools equipped with hand tools and other appliances are for training mechanics, and not farm boys. It might as well be said that farm boys should not be taught anything about book-keeping and that they should leave it for clerks in the banks and stores. As well say that because a farm boy ploughs, he shall not be taught to drive a nail or saw off a board square. Many boys come from the farm to Cornell, who do not know a rip saw from a cross-cut, and to whom the sharpening of a saw or auger is as a dead language. Think of it. We are

compelled to keep a shop in which to teach farm boys in the courses of agriculture, how to drive nails, saw boards, lay out braces, get the pitch of roofs, and many other simple and necessary mechanical operations of a well conducted homestead.

All this the boys should get before they come to college, because only one out of every three hundred of the farmers' children ever get to college. So if they ever get this training, it must be secured at the primary and secondary schools. Thousands of boys, who are going back to the farms, while studying French, astronomy, book chemistry, and possibly Latin in the academies, are totally ignorant of the botanical structure or characteristics of the corn plant, of its real habit, of how it feeds, and of how best to cultivate it. Can these defects in the educational system be remedied? Or at least, can a beginning be made towards a more intelligent system of education?

At the risk of being criticised, I will endeavor to map out in brief, some plans for an improved system. Suppose the teacher in the district school takes the corn plant in full bloom, explains it to the scholars, shows the male and female organs, and tells why corn sometimes grows on the tassel as well as on the spikes in the axils of the leaves. Could not a trained "school ma'am" get boys and girls interested by telling them how plants grow and how they feed. Every garden and flower bed in the district could be made to serve for laboratories and experiment grounds. Why, then, is the teaching of all subjects relating to agriculture entirely banished from the schools? Simply because there are no teachers to teach these things, and there are no teachers, because the farmers have not demanded them. Give a trained teacher a flower bed or a garden one rod square, a garden rake, and a boy or girl eight years old, and the great laws which govern soil, moisture, the effects of extra or cross pollinization of plants, can be taught as well or better to pupils from eight to fifteen years of age at the public schools and on the farm as in the college. I cannot see any reason why these same youths cannot be taught

the laws which govern the breeding and feeding of animals, the production and growth, together with the laws of health. Having learned these laws, they will be far better prepared to grow strong than if they had simply studied a little physiology. Whoever heard the teacher of physiology teaching his students to cut a well balanced ration and one which contained an abundance of phosphates?

THE PRESIDENT: I have the pleasure of introducing to you Capt. E. M. Shaw, of Nashua, executive commissioner of the Board of World's Fair Managers of New Hampshire who will address you.

REMARKS BY E. M. SHAW.

Mr. President, Ladies and Gentlemen:

It is with a great deal of pleasure that I stand here to-day and look into the faces of these people, some of whom I believe I went to school with when I was a boy in this county and whom I have not seen since that day.

I was born here in this county and brought up on one of these farms and I can almost feel that I am one of you.

After working on this old farm as a boy, I went away, and I can remember of the story they told me when I came back about my father's will. When he made his will, he gave this boy so much and that boy so much and that girl so much. When he was asked what he was going to give me, he said: "Well, he never did much for me, nor I for him. He will take care of himself anyway. Give him a hundred dollars." And so I got my hundred dollars and have been taking care of myself since.

But what I wanted to speak to you about to-day was the World's Fair. You know that a World's Fair Commission has been appointed by our excellent governor from this State. I have the pleasure of being one of the members of that commission and I wish to speak to you in regard to two subjects pertaining to this. From the beginning, your World's Fair Commissioners have thought that there were two things which

particularly claimed their attention, so far as the industries of the State were concerned. They knew that all individual exhibits would take care of themselves, that every man who had his own business to attend to, would look after that, but our educational exhibit and our agricultural exhibit, would need more especial looking after. We first directed our attention to that matter and perhaps many of you know what has been done through the committee appointed to have charge of that, of which the present secretary of the Board of Agriculture, Brother Bachelder, is chairman. I wish, however, to call your attention to some of the prominent features of the scheme. It has been arranged that from the exhibits which will be at the fair at Tilton this fall, the best shall be selected and sent to the World's Fair at Chicago. Then following that, there will be a fruit exhibit and a creamery exhibit and in the same manner the best will be selected from those, and so on, through all our agricultural products. This can be successfully done if we all take an interest in it, and I urge upon you all that you do what you can to assist the officers in the development of the State in this way. There is no doubt but what we have resources so we can make a creditable exhibit there at Chicago next year. You already know that this State produces more corn per acre than any other State in the Union. The census shows that. There is no trouble in making a proper exhibit of that. And there are other things in the same way.

Another thing that I wish to speak of is this. The board of managers have, from the start, seen that here was an opportunity to exhibit the resources of the State along the line in which so much attention is being given; that is, of our mountains, hills, streams, and summer resorts, to which so many people come and which is a source of so much revenue to our State.

You may know that a league has been formed, called the Columbian League which has for its purpose the development of these things, and committees have been appointed in every county in the State for the purpose of raising the funds, etc.,

necessary to carry on this work and most of the places will be canvassed.

I was in New London a short time ago and they told me that there were a thousand people there on a visit. They come there and spend their money during the summer months for the sake of enjoying the pleasures of our hills and streams. Now that is what we want them to do. Not only that, but there are many men who were born and brought up in this State and have been away from it for years, made their money, and now there is a desire on their part to come back to the home of their boyhood. This brings wealth into the State and we want them to come and to induce these people to come, we want to give a fine exhibit in this line at Chicago.

The board has erected a state building at Chicago with especial reference to the exhibit of these matters. And aside from the general exhibit in this New Hampshire building, there will be a place for your headquarters, where you can go and meet your friends and where you can go and rest when you are tired.

We think that the money which the State has appropriated and the other money that is used in this exhibit will all come back to us in a few years. This is a money enterprise and we want you all to take an interest in it, as it will affect the business of all of you. We all want to take hold together and develop the resources of the State and show the people of Chicago what we can do.

THE PRESIDENT: I now have the pleasure of introducing to you E. J. Burnham, of Manchester, lecturer of the State Grange, who will address you.

REMARKS BY E. J. BURNHAM.

Mr. President, Gentlemen of the Board of Agriculture, and Ladies and Gentlemen:

It seems too bad, after you have been so highly entertained, and so profitably instructed by the able speakers who have preceded me, that I should detain you for one moment. I would

wish you to be walking up and down these beaches to-day, in the fresh sea air, enjoying yourselves that you might have cause to remember one grand holiday.

But I represent an organization, which, in its restless activity resembles the ocean that stretches away to the left; which, in its solidity, corresponds to the continent so firm which was raised up here ages ago, and upon which this glorious country of ours has been reared; and which again, in its numbers, resembles to some extent the very sands of the sea-shore, and my own wishes I will have to lay aside.

It was expected that I should speak to you this forenoon for a few minutes on "Some of the Hinderances to Agriculture" I was not permitted to listen to Professor Whitehead, but I have no doubt whatever, that he stripped away most of the hinderances, and brought before you such helps as will enable the husbandman, before a long time, to become again what he once was, not only the owner of the soil but the lord thereof.

But there are some hinderances to agriculture and there have always been. If we will go back to the middle ages, and if we will follow Froude through his study of the times of King Henry VIII, we shall find that in England the farming population, who tilled the soil, dragged out but a bare existence from it. We shall be interested to find, as we follow it through, how other men were organizing. There were guilds and guilds formed, until as he expresses it "all of England was honeycombed with guilds." The men of a trade formed guilds together and they profited by it. The spinners in Oldham met together and they formed a guild, which grew strong, until they were able to resist almost successfully, the introduction of the spinning frame. The saddlers had their guild; the weavers had their guild; the machinists had their guild, and they gave their name to Guildhall, where the mayor, who is himself almost one of them, takes his insignia of office. They had special privileges which were the result of organization. They said to parliament, "We want this," and they had it. They said, "We want that," and they had it. The

men engaged in the same branches of labor organized and strength was the result.

But while this was going on, where were the farmers, and what were they doing? They did not organize, and there was where the trouble was, there was the difficulty. They lived back, they were scattered, they did not in a good many cases own the land.

Right here let me say that one of the hinderances of farming has been an advantage to it. It does not pay well enough to be any temptation to capitalists to put their money into farms. If there had been money in it, these men would have obtained the farms and carried on the business of farming with the same energy that they do the banking and the other businesses of the country. They would have formed corporations and have done our farming for us. But it does not pay well enough, and so I say that one of our hinderances has been a blessing.

But there came a time at last when the farmers began to organize, and it was in America. It was in Washington something over twenty-five years ago that they had their first Grange meeting, and now the organization of the Grange reaches from Canada on the north to the Gulf of Mexico on the south; from Boar's Head right here, to the Golden Gate. If you ask me to point out what they have done, I can name some special things. But it is not so much these things that can be measured, as it is that silent, slow steady work, going along all the time in the Granges up and down this country. It is like the force that is constantly working along, up and down this coast, shaping this continent. It leads men and women to have views of their own and to think in right channels. There are bound to be results from this organization. There have been results already, I see one of them here before me now in this splendid audience, whose faces are alive with interest in the important topics that are being discussed here.

I am speaking to-day for the Grange, because I believe in it. It is going to accomplish in this country and in other countries, peacefully, without friction, steadily, slowly, surely, the

independence of the farmer. What organization did for the spinners, the machinists, the knifemakers, and the saddlers; what the trade unions and other organizations do for their members, the Grange not only in New Hampshire but in all the United States, is going to do for the farmer.

I thank you for your kind attention.

THE PRESIDENT: I now have the pleasure of introducing Hon. J. D. Lyman, of Exeter, member of the Board from Rockingham county, who will address you.

REMARKS BY HON. J. D. LYMAN.

Mr. President, Ladies and Gentlemen:

At this meeting where so much has been said, I fear I can add but little to the interest. Then again, most of you know, perhaps, that I speak largely with my left arm. That arm I completely disabled last night, and it expresses itself very vigorously at this moment at the treatment I gave it. But to the subject.

Agricultural education is the text given me. Education is one of the most difficult of all subjects; one of the deepest and profoundest subjects that ever the human mind has to contemplate or human activities engage in. It is vaster than the ocean at our feet and its depths far less known, for the bottom of that ocean has been felt thousands of times by the lead, but no one has ever yet fully fathomed the mysteries of that agriculture by which man, coöperating with the Creator, produces sufficient food and clothing for some fifteen hundred millions of human beings. It is one of the greatest and grandest of all thoughts, that the farmer, through his mind and his muscle, can coöperate with our Heavenly Father, through the laws of nature, to produce this almost incomprehensible amount of material for food and clothing.

Now what ought the young man and the young woman to learn? I answer: That which they will need to know. I say that I answer that they should study,—that they should learn

that which they will need to know. Am I correct? Why, my professor here, says that to strengthen the human intellect and develop the mind they should study Latin and Greek—the dead languages of the dead heathens. Well I say that as language is language, and mathematics is logic, I think there can be no better study than the old college curriculum for such as would be preachers and for such as would be lawyers, because they deal with language and with logic and they need to know language and logic. But our farmers have to deal with nature,—they have to deal with the laws of nature; they have to deal with matter and with things instead of words. Words fill not the stomach and clothe not the back, but we all admit their usefulness.

I deny most emphatically that the study of the dead languages of the dead heathens is better for mental development than the study of the live works of the living God. If you do not think so, look around for a moment and see who it is that has made possible the great progress of this century. Who is it but the student of things? Who thought out the steam engine and the railroad? The students of things—the students of nature. Who gave us the telegraph and telephone? The student of things—of God's forces. Who, by experimenting and finding out the laws of the Creator as applied to iron, reduced the cost of making steel ninety cents on the dollar? Bessemer, the student of iron. Then take his successor who took out of the iron ores of England ten million dollars worth of phosphorus to fertilize the fields of his country and by that very taking out of the phosphorus increased the value of the iron some twenty million dollars. I could give a long list of enterprises which have been made possible by those who have studied things,—the works of the Almighty.

My mother had to work hard a whole day in order to make a yard of cotton cloth. My friends in the factory will make a yard of cotton cloth for every ten minutes time of labor, and this has been brought about through the study of things.

You can look from here and almost if not quite see the place where was raised by Colonel Moulton that famous ox

of ante-revolution days and who drove it down to Portsmouth and presented it to the royal governor, John Wentworth. So pleased was the governor that such a mighty ox had been grown in his province, that he gave the owner and his friends the towns of North Hampton and Centre Harbor. And somewhere in this section of New Hampshire, they found a string long enough to reach around that ox and it was found to girt six feet! That was the size of the ox that was valued so highly at that time! But now they expect to show an ox at Chicago that will weigh four thousand pounds. This has been brought about by those who have studied things and the laws of nature. By the study and use of things Washington won our liberty, and Grant preserved our nation.

But there is nothing more difficult than to teach and apply these sciences. We have not the text-books yet, we have not properly educated the professors yet, because there have been no schools for them to be educated in—I mean no such schools as the future will produce. Indeed the sciences themselves are not yet well developed. The highest science and the most practical art must be wedded in agricultural education. The best scientists in the world and the best practical men must be employed as teachers.

Not muscle, but knowledge, science, and art are the great forces in agriculture. It took more than a thousand acres of land to support each ignorant Indian in this State, and that in a half-starved and nearly naked condition; but with more knowledge, science, and art we have an inhabitant to about each eight acres of cleared land; but the scientific and skilled market gardeners of Paris declare that they can supply the entire population of that department of France from the land thereof, although there is only ninety-five square rods of territory, including waste land and that covered by the city, and by buildings, roads, and water, to each person.

Perhaps no one had more to do than I with the legislation that brought the agricultural college to Durham and secured from the State the one hundred thousand dollars to build the buildings in addition to the proceeds of the sales of the real

estate at Hanover. So you see I am intensely interested. I hope the youth here will live to see at Durham one of the great crowning glories of New Hampshire,—a college, a farm, a workshop, and a home, where the head, the heart, and the hand, the body and the soul of our youth shall be so educated that its graduates shall be the pride of our grand old State, and receive the approving smiles of high Heaven.

Now I have unbounded confidence in the gentlemen composing the board of trustees, and I have no doubt but they will do their utmost to make that school a success. I presume that school will have from eighty thousand to one hundred thousand dollars to be expended on it each year after 1910, and I hope that they will have the best farmer there that stands upon this or any other continent, and that he will teach the boys all he knows. I hope that they will have the best grower of fruits that money will hire, and that he will teach the boys how to grow the fruits that we so much enjoy. I trust they will have the best flocks of sheep that can be found, and a man who knows best how to tend those sheep and how to breed them so they will be still better, and that he will teach the boys these things. I trust they will have the best herds of cows that can be found, and that they will search the world over, if need be, to find a butter and cheese maker that can make butter and cheese that shall not be excelled on the face of this round globe, and that he will teach the boys and girls how to make such butter and cheese.

We are told that there is a farm near Philadelphia where they have been making butter for about one hundred years and that they never sell a pound of it for less than one dollar, yet they always have an ample market.

I take it, that they will have here the best horses, male and female, that can be found and the man that knows best how to breed horses, how to feed horses, how to train horses, and perhaps how to sell them, and certainly how to use them. I take it, that they will have here the best swine that can be found and a man to teach the boys, who knows how to breed swine,—who knows how to make the best quality of pork at

the least expense. I take it that they will have here the best forester that can be found, and that he will teach the boys how, instead of cutting timber from the forest in our State, as they are doing now, threatening their destruction, that they can cut four or five times as much each year and have it last as long as the sun shines or the rain falls. I take it that the best cook that can be found on the continent will be there, and teach these boys and girls how to make food so delicious, that it would tempt the stomach even of a sick man, and so digestible that dyspepsia will be banished from our land; and if we are to drink cider, that they will teach the boys how to make cider so good that no man shall hesitate in the least to pronounce it equal to champagne, instead of a deadly mixture of alcohol and vinegar. I take it that the best needle women that can be found will be there to teach the girls how to make and mend clothing so that wherever the sons and daughters of New Hampshire shall be seen, it will be admitted that their mothers, their wives, and their sisters are the most economical and the best needle women in the world. Then we must have the best school teachers and the best English school, in addition to the most learned scientists in the world as instructors.

Can we teach the boys and girls all of these things? Why not? Cannot you teach the boy how all the crops of the earth are grown, and what they consist of? In conclusion I say that you cannot imagine one single thing in relation to our farming but what can, by such knowledge, be vastly improved. We can have our cows, instead of producing an average of one hundred and twenty-five pounds of butter a year, produce two or three hundred pounds of butter a year. You all know that a cow has produced one thousand pounds of butter in a year, and a number of cows have produced an amount of butter equal to their own weights, and not very light weights at that. A friend of mine is here, I think, who had several cows, each of which produced some eleven hundred gallons of milk a year. England has cultivated her old worn out farms, until, from producing eleven bushels of wheat to

the acre as they used to, they now produce from thirty-six to forty bushels of wheat to the acre, instead of eleven or twelve bushels as do ours in this new country. To this farm the farmers of our State should be able to resort for scions, trees, and plants to improve the orchards and gardens, and for stock to improve their flocks, and for publications and lecturers to disseminate the precious knowledge broadcast over the State.

I have not mentioned nearly all of the things that can be profitably taught, but just look them over for yourself, and see if there is a single thing in the agricultural line but that knowledge and energy will improve immensely. More hay can be grown, more corn can be grown, and at a less cost per bushel, more butter can be made, and so on to the end of the list. The crops of New Hampshire could, in a few years, be doubled. There is no doubt of it. And if they are once doubled it will be easier to double them a second time than it was the first. It is the same as in making a fortune, the hardest part of it is to make the first dollars. I say the agricultural productions of New Hampshire can be doubled. But let us begin and increase them ten per cent. Does anyone doubt but that the knowledge that may be furnished by the institution of which my honored friend here is the president, can do that? And by increasing them ten per cent that institution shall pay us more than all it will have cost up to that time, for an increase of ten per cent would be a yearly increase to the farmers of New Hampshire of something like a million and a quater of dollars on the farm crops alone, exclusive of the increase in forest, and animals and their products.

THE PRESIDENT: We expected to have with us to-day Dr. Alonzo Towle, of Freedom, member of the Board from Carroll county, but he is detained at home by sickness. I will call upon Mrs. Towle, who is present for remarks.

REMARKS BY MRS. ALONZO TOWLE.

Ladies and Gentlemen:

Perhaps I should apologize to you for saying anything at this time. Your president, only about five minutes ago, spoke to me and asked me to say a few words in the place of my husband who could not be here on account of illness.

There are two points in relation to this subject, that seem to me to be very essential. What, in a moral sense, is good to be taught to one class of boys and girls, is good to be taught to all.

To make myself clear, I wish to illustrate what I mean by going back a little. In the old colonial days New England was holding here religion with one mind. There were controversies on the continent and all kinds of infidelity were creeping in, but in this young America, all was prosperous in this line. Why? Because our men and women were firm, they were decided in their moral and spiritual characters. From that day, there has come to us one thing after another. First there was a departure in a little way and then following that came transcendentalism and the humanitarian movement. Then came the anti-slavery movement which resulted in the civil war and the liberating of the slaves. Now the question comes home to us: What next? It depends upon how you educate your girls and boys.

As I have already said, there are two points that seem to me essential in the line of education. One is, that as we are driving out the old ideas, throwing away error, there is great danger that we also shall throw away the truth. Error is what we wish to rid ourselves of, but we must be careful, mothers and fathers, that in the sifting we do not lose the grain as well as the chaff. You know it is like the American people, in drifting, to drift to extremes. Do not let us forget the great fatherhood while contemplating the brotherhood. It is impossible to have a brotherhood, unless we first have a fatherhood. Let us remember all the beautiful things in the beautiful life set before us and teach to our children, not theories,

not rules, but the grand and beautiful life of Christ, and all the beautiful things that made his life beautiful. When you have done this; when you have ingrained into the young mind these truths and these virtues, you have laid a foundation that warrants that man to be a success. Seek wisdom, but with all thy gettings, get understanding, for length of days is in her right hand, and in her left, riches and honor. There are many people who are wise, but many of those people do not understand. If you understand all the laws that pertain to life and health, you will have length of days. If you understand the moral, religious, and spiritual laws, you will have riches and honor. What are riches, but contentment of mind?

There are many things in connection with this that I would like to speak to you about, but the time is short. Do not forget the fatherhood. Mothers, do not forget the Christhood. Mothers, remember that in bringing up your little child, the little truths learned at your knee, will perhaps ensure that child success all through his life.

Another point is the history of past nations and civilizations. Wherever you have found a successful civilization, you have found one that has kept its morality. Wherever you have found a dead or arrested civilization, you will find that they have let in licentiousness and corruption, and from the moment they did that, they began to go down and down until in very many cases mother earth has covered them.

Teach your girls and boys this. You do teach it to your girls; you tell your girls that their purity is above all price, that it is everything; that it is priceless above rubies. Teach your boys the same thing. Teach them that a dishonored citizenship, a principle or an opinion that can be trafficked with, is just as much a dishonor to the man as the same thing is to the woman.

Sift out the corruption that is sure to be the ruin of this our republic if persisted in. Political corruption is always followed by spiritual decadence. When we are politically corrupt and spiritually weak, the end we can see. We are dead, our progress is arrested.

These are the two points that presented themselves to me : the moral, spiritual, and religious education of all our children ; the politically moral education of our boys.

THE PRESIDENT : I now have the pleasure of introducing to you Hon. George A. Wason, of New Boston, member of the Board from Hillsborough county, who will address you.

REMARKS BY HON. GEORGE A. WASON.

Mr. President :

To speak after a woman and to be followed by a Mann on your programme, I say is a pretty difficult position for a person to be in. I do not intend to say anything now at this late hour, except to impress upon your minds some of the important points that have been made here to-day.

I remember of reading in a paper but a few days ago, some points that just touch upon this subject of an agricultural education, and I will merely say a few words in regard to them.

You must remember, my brother farmers, that your profession is the highest and most productive in all that which gives to life its value. Is not that a consideration worthy for you to weigh when you compare farming with other pursuits. Not only that, but its power in this direction is practically limitless, and it gives the desirable things of life in exact proportion to the intelligence and the industry you put into the culture of your farms.

So it is necessary to have an agricultural education that you may make a success of farming in New Hampshire. Also, I would have you teach your sons and daughters a good business education, not that they should enter into another business than that of farming ; but because it has come to the point where the farmer must not only understand how to farm, but he must know how to conduct his farming on business principles, the same as all other business and professions are conducted, if he wishes to make a success of it. That has

already been told you to-day, but I wish to impress it upon your minds and make you see, if possible, the importance of remembering this.

We have been told that it is necessary that we should select one branch of farming and pursue that to its end. Some think that if they did that, they would not be able to accomplish much in so narrow a line. You may doubt it, but nevertheless a man may study all his life on one branch of farming and bring it to a successful issue, yet he can never reach perfection. There will always be room for improvement, and the farmer need never stop because he has reached a point where he can go no further.

There are two things that it is necessary for every farmer's boy and every farmer's daughter to do. First, to get a good education at the common schools or at the academies. It has been told you to-day just what we farmers are demanding and what we should have, and that is, that the rudiments of an agricultural education should be introduced into our public schools. If this were done a better foundation could be laid for the future course in the agricultural college or for the practical work on the farm.

Then, too, every farmer should study political economy. You must study that as well as study agriculture, if you wish to keep up with the times. In the past history of our country, the farmer has been the first to go and the last to leave in any good cause, and it will be so now. Then you must understand the politics and the policy of this country that you can demand your own rights, and at the same time not deprive any other occupations of their rights, but that you may all stand equal.

I want you also to remember this. You can go home to your New Hampshire farms and till this soil; it can be made fertile and you can get greater rewards from it than you could from the fertile soils of the West, and you can put its crops into the market with better returns. Besides all that, here in New England you have greater privileges, being near the great cities and centres of civilization, and at the same time

near the seashore, and near this beautiful scenery of New Hampshire where we can breathe the free air of our mountains and drink the pure waters of our hills. It is here that you can lead a life worthy of your sires.

THE PRESIDENT: We proposed to have a Mann speak to you at this time, but he does not appear to be present.

THE SECRETARY: I move you, Mr. President, that we extend a vote of thanks to Colonel Dumas for the courtesies shown us on this occasion.

Motion is put and carried.

THE SECRETARY: I also move that we extend a vote of thanks to the speakers who have contributed to make this day a success. Carried.

The meeting was then adjourned.

N. J. BACHELDER,
Secretary.

ANNUAL MEETING.

CONCORD, N. H., AUGUST 17, 1892.

The Board met in annual session at the office of the secretary in Concord on the third Wednesday in August, 1892, there being present President Humphrey, Vice-President Philbrick, Messrs. Lyman, McDaniel, Perry, Thompson, and Secretary Bachelder. Proceeded to the election of officers for the term of two years and the following were unanimously chosen:

President—Moses Humphrey.

Vice-President—George S. Philbrick.

Secretary—N. J. Bachelder.

Voted, To hold the annual winter meeting at Peterborough at such time as the president and secretary may determine.

Vice-President Philbrick presented the following which was adopted:

WHEREAS, The beauty of our scenery and the purity of our air and water are continually attracting tourists and people in every walk in life to our State during the summer months and considering the cost and inconvenience of bad roads to all our citizens, we believe something might and ought to be done to improve the condition of our highways ; therefore,

Resolved, That the State Board of Agriculture invite the State Grange to appoint a committee of three to coöperate with a like committee of the Board to take the matter under consideration, to the end that it may be brought before the next session of the Legislature.

In accordance with the foregoing resolution the president named Messrs. Philbrick, Lyman, and Wason as said committee on the part of the State Board of Agriculture.

Voted, That the time and place of holding the several county institutes be referred to the secretary and member from the respective counties.

No further business appearing, the Board adjourned.

N. J. BACHELDER,

Secretary.

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TWELFTH ANNUAL REPORT

RELATING TO THE

REGISTRATION AND RETURN

OF

BIRTHS, MARRIAGES, DIVORCES, AND DEATHS

IN NEW HAMPSHIRE,

FOR THE YEAR 1891.

VOLUME IX.—NEW SERIES.

CONCORD:

IRA C. EVANS, PUBLIC PRINTER.

1893.

THE STATE OF NEW HAMPSHIRE.

OFFICE OF THE REGISTRAR OF VITAL STATISTICS,

CONCORD, November 2, 1892.

To His Excellency the Governor and the Honorable Council:

I have the honor to submit herewith, in accordance with the laws of the State of New Hampshire, the twelfth annual report relating to the registration of births, marriages, divorces, and deaths in this State for the year ending December 31, 1891.

The number of births reported in the State for the year 1891 was 7,510, or 564 more than was reported in 1890; the number of marriages was 3,904, or 283 more than was returned in 1890; the number of deaths was 7,310, or 58 less than in 1890.

The total population of the State, according to the census of 1890, is 376,530, and the proportion of births, marriages, and deaths to each one thousand of the population is as follows:

Birth-rate, 19.94; marriage-rate, 10.36 (couples); divorce-rate, 1.01; death-rate, 19.41.

The returns of marriages, divorces, and deaths may be regarded as correct; those of births defective.

The tables have been arranged substantially as in the last registration report.

Reference should be had to the index at the end of this volume for any subject included in this report.

Respectfully submitted,

Irving A. Watson
Registrar of Vital Statistics.

TABLE No. I.
Showing Births for 1880, 1881, 1882, 1883, 1884, 1885, 1886, 1887, 1888, 1889, 1890, and 1891.

COUNTIES.	Population in 1880.	Population in 1890.	Births.											
			1880.	1881.	1882.	1883.	1884.	1885.	1886.	1887.	1888.	1889.	1890.	1891.
Rockingham .	49,064	49,650	733	675	749	692	637	640	757	727	750	752	773	764
Strafford.....	35,558	38,442	322	423	625	698	640	621	662	701	725	705	784	814
Belknap	17,948	20,321	215	227	273	261	242	256	263	296	307	328	322	370
Carroll	18,224	18,124	153	198	274	286	275	245	264	249	236	260	261	279
Merrimack...	46,300	49,435	628	750	809	723	739	734	818	773	852	921	938	1,032
Hillsborough.	75,634	93,247	840	879	1,617	1,675	1,843	1,952	2,148	2,313	1,798	1,923	1,963	2,144
Cheshire	28,734	29,579	255	348	445	496	554	511	514	525	553	546	543	602
Sullivan.....	18,161	17,304	245	236	265	269	268	267	230	269	276	287	306	309
Grafton	38,788	37,217	584	593	657	647	643	631	623	623	599	695	636	658
Coös	18,580	23,211	274	286	410	403	406	462	378	434	347	495	420	538
Total	346,991	376,530	4,249	4,615	6,124	6,150	6,247	6,319	6,657	6,910	6,443	6,912	6,946	7,510

TABLE No. I. — *Continued.*
Showing Marriages for 1880, 1881, 1882, 1883, 1884, 1885, 1886, 1887, 1888, 1889, 1890, and 1891.

COUNTIES.	Population in 1880.	Population in 1890.	MARRIAGES.									
	1880.	1881.	1882.	1883.	1884.	1885.	1886.	1887.	1888.	1889.	1890.	1891.
Rockingham .	310	382	419	399	419	447	440	457	420	484	458	507
Strafford . . .	255	332	428	425	415	388	418	420	416	377	457	466
Belknap	108	177	166	198	147	150	183	213	183	186	178	200
Carroll	136	149	159	175	171	182	177	149	163	176	155	200
Merrimack . .	330	353	364	432	344	361	345	421	405	423	473	430
Hillsborough .	752	674	1,025	949	886	815	876	915	879	1,013	939	1,043
Cheshire	195	206	232	262	238	233	240	255	221	250	237	289
Sullivan	134	151	149	167	138	109	140	123	146	154	172	175
Grafton	274	270	319	339	332	327	318	328	322	343	314	338
Cods	135	146	172	149	202	168	187	214	224	215	238	256
Total	2,629	2,830	3,433	3,495	3,292	3,180	3,324	3,495	3,379	3,621	3,621	3,904

TABLE No. I. — *Continued.**Showing Deaths for 1880, 1881, 1882, 1883, 1884, 1885, 1886, 1887, 1888, 1889, 1890, and 1891.*

COUNTIES.	Population in 1880.	Population in 1890.	DEATHS.											
			1880.	1881.	1882.	1883.	1884.	1885.	1886.	1887.	1888.	1889.	1890.	1891.
Rockingham .	49,064	49,728	627	717	732	699	873	911	963	876	896	875	1,065	991
Strafford . . .	35,558	38,439	184	329	372	494	627	619	609	673	688	691	801	809
Belknap	17,948	20,285	147	153	219	262	285	289	362	369	392	389	374	392
Carroll	18,224	18,111	107	189	219	253	333	269	303	294	328	298	303	341
Merrimack . .	46,300	49,401	595	695	726	762	736	796	833	835	920	891	983	951
Hillsborough	75,634	93,131	1,203	1,396	1,390	1,551	1,655	1,701	1,681	1,697	1,846	1,740	1,973	1,957
Cheshire . . .	28,734	29,728	240	271	405	418	497	494	475	482	488	525	557	482
Sullivan	18,161	17,286	190	261	261	254	273	284	328	283	327	314	332	280
Grafton	38,788	37,334	429	482	487	547	652	611	616	602	655	625	651	648
Coös	18,580	23,164	107	157	190	181	263	227	256	368	314	348	329	459
Total . . .	346,991	376,607	3,829	4,650	5,001	5,421	6,194	6,201	6,426	6,479	6,854	6,696	7,368	7,310

TABLE No. II.

Population of 1890; Births, Marriages, and Deaths, with percentage of each to one thousand of the population, for the year ending December 31, 1891.

COUNTIES.	Population in 1890.	Births.	Rate per 1,000 of population.	Marriages.	Rate per 1,000 of population.	Deaths.	Rate per 1,000 of population.
Rockingham.....	49,650	764	15.38	507	10.21	991	19.95
Strafford.....	38,442	814	21.14	466	12.12	809	21.04
Belknap.....	20,321	370	18.20	200	9.84	392	19.29
Carroll.....	18,124	379	15.39	200	11.03	341	18.81
Merrimack.....	49,435	1,032	20.87	430	8.69	951	19.23
Hillsborough....	93,247	2,144	22.99	1,043	11.18	1,957	20.98
Cheshire.....	29,579	602	20.35	289	9.77	482	16.29
Sullivan.....	17,304	309	17.85	175	10.11	280	16.18
Grafton.....	37,217	658	17.68	338	9.10	648	17.41
Coös.....	23,211	538	23.17	256	11.03	459	19.77
Total.....	376,530	7,610	20.21	3,904	10.36	7,310	19.41

TABLE
Births, Marriages, and Deaths for
ROCKINGHAM

TOWNS.	Population in 1890.	BIRTHS.									
		Sex.					Parentage.				
		Male.	Female.	Not stated.	Total.	Rate per 1,000.	Both American.	Both foreign.	American mother and foreign father.	American father and foreign mother.	Not stated.
Atkinson	483	3	1	4	8.28	3	1				
Auburn	531	5	3	8	12.68	7					1
Brentwood	967	8	9	17	17.58	12	3	2			
Candia	1,108	6	5	11	9.93	10					1
Chester	958	5	10	15	15.65	11		1	2	1	
Danville	666	2	3	5	7.51	2	2				1
Deerfield	1,220	7	4	11	9.02	9	1				1
Derry	2,604	30	16	46	17.66	30	9	2	4	1	
East Kingston . .	461	5		5	10.85	3	2				
Epping	1,721	31	19	50	29.05	26	22	2			
Exeter	4,284	46	47	94	21.95	48	26	7	10	3	
Fremont	726	11	12	23	31.82	13	6	2	2		
Greenland	647	7	2	9	13.91	7					2
Hampstead	860	2	1	3	3.49	2					1
Hampton	1,330	14	3	17	12.78	14				3	
Hampton Falls . .	622	1	3	4	6.43	3	1				
Kensington	547	3	1	4	7.31	4					
Kingston	1,120	7	4	11	9.82	8				1	2
Londonderry . . .	1,220	16	7	23	18.85	17	1	2	3		
Newcastle	488	1	1	2	4.10	1		1			
Newington	401		3	3	7.48	3					
Newmarket	2,742	28	35	63	22.97	24	28	2	5	4	
Newton	1,064	15	7	22	20.68	17	3				2
N. Hampton	804	4	6	10	12.44	7				2	1
Northwood	1,478	16	9	25	16.92	19		1	1	4	
Nottingham	988	8	6	14	14.17	12		1	1		
Plaistow	1,085	4	5	9	8.29	6	1			1	1
Portsmouth	9,827	53	69	127	12.92	83	19	9	13	3	
Raymond	1,131	20	8	28	24.76	23				1	4
Rye	978	9	4	13	13.29	10	2	1			
Salem	1,805	9	14	23	12.74	16	6			1	
Sandown	475	1	1	2	4.21						2
Seabrook	1,672	20	15	36	21.53	36					
S. Hampton	370	1	1	2	5.41	1	1				
S. Newmarket . . .	855	5	6	11	12.87	8	1	2			
Stratham	680	7	3	10	14.71	7				2	1
Windham	632	3	1	4	6.33	2	1			1	
Total	49,650	413	344	7	764	15.38	504	136	35	56	33

No. III.

the year ending December 31, 1891.

COUNTY.

MARRIAGES.						DEATHS.						
Both American.	Both foreign.	Husband American.	Wife American.	Not stated.*	Total.	Sex.				Nativity.		
						Male.	Female.	Not stated.	Total.	American.	Foreign.	Not stated.
1					1	1	1		2	1	1	4.14
4					4	8	7		15	10	2	23.77
5			1		6	14	14		*28	9	2	17 28.90
3	1				4	13	14		27	21	3	24.36
11		1			12	10	14		24	20	2	25.05
2			1	1	4	2	6		8	6	1	12.01
11				2	13	16	19		35	28	2	28.68
33		1	1		35	20	22		42	35	1	6 16.12
1					1	8	5		13	12		1 28.20
5	2				7	31	22		53	45	3	5 30.78
30	9	7	1	8	55	28	33		61	48	8	5 14.23
2					2	4	3		7	6	1	9.64
4		1		1	6	7	8		15	15		23.18
3					3	6	8		14	6		8 16.27
4					4	14	18		32	27	5	24.06
6					6		6		6	5	1	9.64
5					5	4	6		10	9		1 18.28
4	1			1	6	10	3		13	8		5 11.61
4		1			5	16	13		29	23	2	4 23.77
3					3	1	3		4	2	1	1 8.19
2					2	3	9		12	6	2	4 29.92
19	11	5	3		38	30	36		66	51	13	2 24.07
5	1	1			7	9	12		21	18	1	2 19.73
				3	3	9	4		13	10		3 16.17
13				1	14	15	15		30	26	2	2 20.30
10			1	1	12	4	5		9	5	1	3 9.10
5	1	1	2	1	10	8	12		20	15		5 18.43
97	22	13	11	30	173	109	96	3	208	163	26	19 21.17
13					13	10	8		18	18		15.92
6		1			7	10	5		15	14		1 15.34
8	1		1	1	11	18	19		37	33	3	1 20.50
1		1			2	2	3		5	4		1 10.53
18		3			21	25	15		40	34	3	3 23.92
1		1			2	8	2		10	10		27.03
3					3	10	7		17	12	4	1 19.88
3					3	8	3		11	9	1	1 16.18
4					4	12	9		21	20	1	33.22
349	49	37	22	50	507	503	485	3	991	784	92	115 19.95

* Died at county farm, 16.

— *Continued.*

COUNTY.

MARRIAGES.						DEATHS.							
						Sex.				Nativity.			
Both American.	Both foreign.	Husband American.	Wife American.	Not stated.	Total.	Male.	Female.	Not stated.	Total.	American.	Foreign.	Not stated.	Death-rate per 1,000.
7	...	...	...	...	7	9	8	...	17	16	...	1	12.07
129	35	14	10	4	192	155	153	...	308	235	62	11	24.08
3	...	...	1	...	4	10	9	...	19	18	1	...	21.83
27	...	1	1	2	31	29	23	...	52	50	...	2	16.97
5	...	1	...	...	6	9	4	...	13	10	2	1	21.45
...	...	...	...	...	...	6	1	...	7	6	1	...	19.07
3	...	...	...	1	4	6	4	1	11	11	...	...	53.14
16	...	1	...	...	17	18	12	...	30	27	2	1	18.29
6	1	...	...	...	7	10	3	...	13	9	...	4	22.45
58	13	1	3	10	85	72	72	...	144	121	8	15	19.46
11	15	...	2	...	28	16	13	1	30	18	8	4	14.97
34	20	1	2	18	75	67	75	1	143	104	29	10	23.03
10	...	...	...	...	10	13	9	...	22	19	...	3	16.85
309	84	19	19	35	466	420	386	3	809	644	113	52	21.04

TABLE No. III.

BELKNAP

TOWNS.	Population in 1890.	BIRTHS.								
		Sex.					Parentage.			
		Male.	Female.	Not stated.	Total.	Rate per 1,000.	Both American.	Both foreign.	American mother and foreign father.	American father and foreign mother.
Alton.....	1,372	12	5	..	17	12.39	14	1	1	..
Barnstead....	1,264	11	4	..	15	11.86	12	..	..	1
Belmont	1,142	12	10	..	22	19.26	14	5	1	1
Centre Harbor	479	6	1	..	7	14.61	7	..	..	..
Gilford.....	3,585	27	27	1	55	15.34	28	15	5	3
Gilmanton....	1,211	3	4	..	7	5.78	4	..	..	3
Laconia.....	6,143	101	87	2	190	30.92	61	96	13	13
Meredith.....	1,642	7	14	..	21	12.78	16	..	1	3
New Hampton	935	5	1	..	6	6.41	5	..	1	..
Sanbornton ..	1,027	8	8	..	16	15.57	13	..	1	..
Tilton	1,521	5	9	..	14	9.20	9	3	1	..
Total....	20,321	197	170	3	370	18.20	183	120	24	21

— *Continued.*

COUNTY.

MARRIAGES.						DEATHS.							
						Sex.				Nativity.			
Both American.	Both foreign.	Husband American.	Wife American.	Not stated.	Total.	Male.	Female.	Not stated.	Total.	American.	Foreign.	Not stated.	Death-rate per 1,000.
12	...	1	1	...	14	17	9	...	26	23	1	2	18.95
6	...	...	1	1	8	16	13	...	29	24	1	4	22.94
7	1	1	...	...	9	9	10	...	19	16	1	2	16.64
6	...	...	...	...	6	4	3	...	7	7	...	...	14.61
25	7	7	6	...	45	32	27	...	59	38	5	16	16.45
7	...	1	...	1	9	5	10	...	15	12	...	3	12.38
37	15	10	6	4	72	84	75	4	163	108	14	41	26.66
10	...	...	...	1	11	15	8	...	23	19	2	2	14.01
5	...	1	...	...	6	7	4	...	11	9	...	2	11.76
5	...	...	...	...	5	9	11	...	20	18	...	2	19.47
7	2	2	...	4	15	13	7	...	20	12	...	8	13.14
127	25	23	14	11	200	211	177	4	392	286	24	82	19.29

TABLE No. III.

CARROLL

TOWNS.	Population in 1890.	BIRTHS.								
		Sex.					Parentage.			
		Male.	Female.	Not stated.	Total.	Rate per 1,000.	Both American.	Both foreign.	American mother and foreign father.	American father and foreign mother.
Albany	377	3	2	..	5	13.23	4	...	...	1
Bartlett	1,247	14	20	..	34	27.26	13	11	3	7
Brookfield ...	349	1	1	..	2	5.73	1	1	...	...
Chatham	329	1	3	..	4	12.15	4	...	...	...
Conway	2,331	28	34	1	63	27.02	50	7	3	3
Eaton	514	3	...	1	4	7.78	4	...	...	...
Effingham ...	720	4	4	..	8	11.11	8	...	...	...
Freedom	630	2	3	..	5	7.93	4	...	...	1
Hart's Locat'n	187	...	2	..	2	10.68	...	1	...	1
Jackson	579	3	3	..	6	10.36	6	...	...	...
Madison	554	2	4	..	6	10.83	5	...	...	1
Moultonboro'	1,034	6	10	..	16	15.47	13	...	...	2
Ossipee	1,630	6	5	1	12	7.36	8	1	...	2
Sandwich	1,303	9	3	..	12	9.20	11	...	1	...
Tamworth ...	1,025	8	8	..	16	15.60	13	...	1	1
Tuftonboro'..	767	4	10	..	14	18.25	12	...	...	1
Wakefield	1,528	20	16	..	36	23.56	27	4	3	1
Wolfeboro'...	3,020	16	18	..	34	11.25	28	1	...	1
Total	18,124	130	146	3	279	15.39	211	26	11	21

— Continued.

COUNTY.

MARRIAGES.						DEATHS.							
						Sex.				Nativity.			
Both American.	Both foreign.	Husband American.	Wife American.	Not stated.	Total.	Male.	Female.	Not stated.	Total.	American.	Foreign.	Not stated.	Death-rate per 1,000.
1			1		2		1		1	1			2.65
10	6	2	1		19	10	10		20	16	2	2	16.03
3					3	1	2		3	3			8.56
2					2	4	4		8	8			24.31
26	2	4	3	3	38	24	24		48	42	1	5	20.59
5					5	2	2		4	4			7.78
10		1		1	12	8	7		15	11		4	20.83
7	1	2		1	11	5	4	1	10	8		2	15.87
1					1	2			2		2		10.68
9			1		10	11	4		15	15			25.90
8		1			9	7	5		12	11		1	21.66
8		1			9	14	5		19	17		2	18.37
18			1		19	23	21		44	32		12	26.99
8		1		3	12	14	18		32	29	1	2	24.55
5			1	1	7	14	13		27	23		4	26.34
4					4	9	6		15	15			19.55
11	2		1		14	13	14		27	25		2	17.67
16	2	2			23	20	19		39	33	4	2	12.91
152	13	14	12	9	200	181	159	1	341	293	10	38	18.81

TABLE No. III.

MERRIMACK

TOWNS.	Population in 1800.	BIRTHS.									
		Sex.					Parentage.				
		Male.	Female.	Not stated.	Total.	Rate per 1,000.	Both American.	Both foreign.	American mother and foreign father.	American father and foreign mother.	Not stated.
Allentown ..	1,475	26	21	..	47	31.85	3	40	1	2	1
Andover	1,090	15	11	..	26	23.85	21	...	1	4	..
Boscawen	1,487	12	18	..	30	20.17	16	8	2	3	1
Bow	725	1	1	..	2	2.75	2	...	...	...	..
Bradford	810	3	4	..	7	8.64	6	1	...	...	..
Canterbury ...	964	9	11	1	21	21.78	17	1	1	1	1
Chichester ...	661	3	...	...	3	4.53	3	...	...	...	..
Concord	17,004	222	199	1	422	24.81	207	133	41	33	8
Danbury	683	6	4	..	10	14.64	8	...	2	...	..
Dunbarton	524	4	6	..	10	19.08	8	1	...	1	..
Epsom	815	9	3	..	12	14.72	9	2	...	...	1
Franklin	4,085	38	47	..	85	20.80	41	27	7	7	3
Henniker ...	1,385	14	8	..	22	15.88	20	...	1	1	..
Hill	548	3	3	..	6	10.94	5	...	...	1	..
Hooksett	1,893	26	20	..	46	24.30	12	29	2	2	1
Hopkinton ...	1,817	12	11	..	23	12.65	20	1	1	...	1
Loudon	1,000	3	6	..	9	9.00	7	...	...	...	2
Newbury	487	4	2	..	6	12.32	6	...	...	...	..
New London ..	799	4	6	..	10	12.51	7	1	...	2	..
Northfield ...	1,115	7	4	..	11	9.86	10	...	...	...	1
Pembroke	3,172	51	52	..	103	32.47	10	79	8	5	1
Pittsfield	2,605	35	15	..	50	19.19	32	10	1	5	2
Salisbury	655	5	2	..	7	10.68	6	...	...	...	1
Sutton	849	14	9	..	23	27.09	21	...	...	1	1
Warner	1,383	12	10	..	22	15.90	19	1	1	1	..
Webster	564	4	5	..	9	15.95	9	...	...	...	..
Wilnot ...	840	7	3	..	10	11.90	8	...	...	1	1
Total	49,435	549	481	2	1,032	20.87	533	334	69	70	26

— Continued.

COUNTY.

MARRIAGES.						DEATHS.							
Both American.	Both foreign.	Husband American.	Wife American.	Not stated.	Total.	Sex.				Nativity.			
						Male.	Female.	Not stated.	Total.	American.	Foreign.	Not stated.	Death-rate per 1,000.
1	25	1	.....	.....	27	12	11	.....	23	17	5	1	15.59
8	.....	.....	.....	1	9	14	10	.....	24	22	.....	2	22.01
4	.....	.....	.....	2	6	30	18	.....	*48	34	7	7	32.27
3	.....	2	1	2	8	3	1	.....	4	4	.....	.....	5.51
8	.....	.....	.....	.....	8	11	9	.....	20	20	.....	.....	24.69
8	.....	1	1	1	11	8	11	.....	19	17	.....	2	19.71
5	.....	.....	.....	.....	5	8	9	.....	17	14	.....	3	25.71
116	27	11	13	6	173	182	162	.....	†344	290	46	8	20.23
4	.....	.....	1	.....	5	4	5	.....	9	9	.....	.....	13.17
3	.....	.....	.....	.....	3	5	4	.....	9	9	.....	.....	17.17
8	.....	.....	.....	.....	8	8	3	.....	11	8	3	.....	13.49
25	3	6	6	.....	40	21	42	.....	63	51	6	6	15.42
7	.....	.....	.....	.....	7	10	14	.....	24	23	1	.....	17.32
1	.....	.....	.....	.....	1	2	4	.....	6	5	1	.....	10.94
7	7	.....	1	.....	15	12	17	.....	29	19	3	7	15.31
9	.....	.....	.....	1	10	15	21	.....	36	30	2	4	19.81
5	.....	1	.....	.....	6	15	15	.....	30	25	.....	5	30.00
3	.....	1	.....	.....	4	6	9	.....	15	12	.....	3	30.80
2	.....	.....	.....	.....	2	6	8	.....	14	12	2	.....	17.52
4	.....	1	.....	.....	5	8	7	.....	15	9	2	4	13.45
3	15	3	5	1	27	27	23	.....	50	33	15	2	15.76
11	3	1	1	3	19	21	15	.....	36	32	1	3	13.81
5	.....	.....	.....	.....	5	14	9	.....	23	22	.....	1	35.11
2	.....	.....	.....	.....	2	15	10	.....	25	21	.....	4	29.43
9	.....	2	.....	.....	11	17	18	.....	35	30	1	4	25.30
6	.....	1	.....	.....	7	3	5	.....	8	8	.....	.....	14.18
5	.....	1	.....	.....	6	6	8	.....	14	12	.....	2	16.66
272	80	32	29	17	430	483	468	.....	951	788	95	68	19.23

* Died at county farm, 19.

† At public institutions, 72.

TABLE No. III.
HILLSBOROUGH

TOWNS.	Population in 1890.	BIRTHS.									
		Sex.					Parentage.				
		Male.	Female.	Not stated.	Total.	Rate per 1,000.	Both American.	Both foreign.	American mother and foreign father.	American father and foreign mother.	Not stated
Amherst	1,053	8	4 . .	12	11.39	8	1	2	1	..	
Antrim	1,248	14	11 . .	25	20.03	18	1	2	2	2	
Bedford	1,102	9	13 . .	22	19.96	17	3	..	..	2
Bennington . . .	542	4	5 . .	9	16.60	4	3	..	..	2
Brookline	548	5	8 . .	13	23.72	11	1	..	1	..	
Deering	531	10	4 . .	14	26.36	13	1	..	..	..
Francestown . . .	837	7	8 . .	15	17.92	7	6	1	1	..	
Goffstown	1,981	17	15 . .	32	16.15	25	2	1	2	2	
Greenfield	607	7	2 . .	9	14.82	6	2	1	..	..
Greenville	1,255	11	25 . .	36	28.68	6	24	2	2	2	
Hancock	637	7	3 . .	10	15.69	6	1	3	..	..
Hillsborough . . .	2,120	13	17 . .	30	14.15	21	2	5	2	..	
Hollis	1,000	6	12 . .	18	18.00	13	2	..	2	1	
Hudson	1,092	5	8 . .	13	11.90	10	..	1	2	..	
Litchfield	252	2	1 . .	3	11.90	2	1	..	..	..
Lyndeborough . .	657	6	5 . .	11	16.74	9	1	1	..	..
Manchester	44,126	488	453 22	963	21.82	193 548	76	58	88	..	
Mason	629	8	3 . .	11	17.48	8	2	..	1	..	
Merrimack	951	5	5 . .	10	10.51	9	1	..	..	..
Milford	3,014	34	22 . .	56	18.58	41	8	3	2	2	
Mont Vernon . . .	479	3	3 . .	6	12.52	4	..	..	1	1
Nashua	19,311	314	343 5	662	34.28	201 350	45	57	9	..	
New Boston . . .	1,067	10	7 . .	17	15.93	12	2	1	1	1	
New Ipswich . . .	969	13	12 . .	25	25.79	11	9	1	3	1	
Pelham	791	7	5 . .	12	15.17	9	1	1	..	1	
Peterborough . . .	2,507	27	21 . .	48	19.14	25	13	4	4	2	
Sharon	137	2	..	2	14.59	2	..	..	..	..
Temple	342	1	1 . .	2	5.84	1	..	..	..	1
Weare	1,550	14	7 . .	21	13.54	17	1	..	..	3
Wilton	1,850	14	20 . .	34	18.37	18	5	2	6	3	
Windsor	62	2	1 . .	3	48.38	3	..	..	..	..
Total	93,247	1,073	1,044 27	2,144	22.99	730 991	152	148	123	..	

— *Continued.*

COUNTY.

MARRIAGES.						DEATHS.							
Both American.	Both foreign.	Husband American.	Wife American.	Not stated.	Total.	Sex.				Nativity.			
						Male.	Female.	Not stated.	Total.	American.	Foreign.	Not stated.	Death-rate per 1,000.
6		1		2	9	14	8		22	20	1	1	20.89
11	4	3	2		20	11	7		18	18			14.42
5					5	11	13		24	21	3		21.77
2				2	4	9	5		14	10	2	2	27.71
2					2	5	4		9	7		2	16.42
3					3	2	3		5	5			9.41
7	1			1	9	5	12		17	14		3	20.31
15					15	21	15		36	28	1	7	18.17
4					4	8	3		11	11			18.12
8	4	3	1		16	11	11		22	15	5	2	17.53
4	1				5	8	6		14	10		4	21.97
21	1	1		2	25	17	23		40	35	3	2	18.86
3					3	13	8		21	18		3	21.00
7		1	1		9	11	12		23	19	2	2	21.06
3					3	3	3		6	6			23.80
5		1			6	9	3		12	10	1	1	18.26
187	254	55	38	8	542	444	470	28	*942	612	240	90	21.34
5			1		6	4	7		11	8	1	2	17.48
4					4	11	5		16	14	1	1	16.82
21			2		23	24	26		50	41	7	2	16.58
2			1		3	6	7		13	13			27.14
126	84	31	19	8	262	211	191	6	408	277	93	38	21.13
4				2	6	6	9		15	14	1		14.05
6	1		1		8	8	11		19	17		2	19.61
2		1			3	8	6		14	14			17.69
25	1	1	1		28	24	27		51	44	4	3	20.34
1					1	2			2	1			14.59
1					1	4	4		8	4	2	2	23.39
8				2	10	16	22		38	31	3	4	24.51
6		1	1		8	31	43		†74	34	3	37	40.00
...						2			2	2			32.25
498	351	99	68	27	1,043	959	964	34	1,957	1,373	373	211	20.98

* Died at public institutions, 27.

† Died at county farm, 38.

TABLE No. III.

CHESHIRE

TOWNS.	Population in 1890.	BIRTHS.									
		Sex.					Parentage.				
		Male.	Female.	Not stated.	Total.	Rate per 1,000.	Both American.	Both foreign.	American mother and foreign father.	American father and foreign mother.	Not stated.
Alstead	870	6	9	..	15	17.24	14	..	1	..	..
Chesterfield ..	1,046	5	5	..	10	9.55	9	..	1	..	..
Dublin	582	4	3	..	7	12.02	6	..	1	..	..
Fitzwilliam..	1,122	7	8	..	15	13.36	9	2	4	..	..
Gilsum	643	4	11	..	15	23.32	13	..	2	..	..
Harrisville ...	748	8	7	1	16	21.39	7	6	1	1	1
Hinsdale	2,258	28	31	..	59	25.68	33	15	5	5	1
Jaffrey	1,469	23	10	..	33	22.46	11	12	2	7	1
Keene	7,446	84	72	6	162	21.75	106	33	10	10	3
Marlborough .	1,695	22	21	..	43	25.36	8	28	3	4	..
Marlow	584	2	7	1	10	17.12	10	..	..	..	..
Nelson	332	1	..	..	1	3.01	1	..	..	..	..
Richmond ...	476	3	6	..	9	18.90	6	..	1	1	1
Rindge	996	9	10	..	19	19.07	13	1	2	3	..
Roxbury	129	1	1	..	2	15.50	1	..	..	..	1
Stoddard	400	3	3	..	6	15.00	5	..	..	1	..
Sullivan	337	4	1	..	5	14.83	4	..	1	..	..
Surry	270	1	2	..	3	11.11	2	..	1	..	..
Swanzy	1,600	16	10	..	26	16.25	17	4	3	1	1
Troy	999	13	10	..	23	23.02	10	7	1	4	1
Walpole	2,163	49	34	..	83	38.37	45	25	2	9	2
Westmoreland	830	4	4	..	8	9.63	4	1	..	..	3
Winchester ..	2,584	16	14	2	32	12.38	23	4	1	1	3
Total	29,579	313	279	10	602	20.35	357	138	42	47	18

— Continued.

COUNTY.

MARRIAGES.						DEATHS.							
						Sex.				Nativity.			
Both American.	Both foreign.	Husband American.	Wife American.	Not stated.	Total.	Male.	Female.	Not stated.	Total.	American.	Foreign.	Not stated.	Death-rate per 1,000.
4	...	...	...	...	4	8	7	...	15	15	...	...	17.24
10	...	...	1	1	12	10	9	...	19	19	...	...	18.04
7	...	...	...	...	7	4	1	...	5	4	...	1	8.59
5	...	1	...	1	7	6	12	...	18	15	2	1	16.04
8	1	...	1	...	10	6	11	...	17	16	1	...	26.43
4	2	4	...	...	10	1	3	...	4	4	...	...	5.34
9	3	1	3	5	21	14	11	...	25	19	4	2	11.07
9	2	1	1	...	13	16	12	...	28	20	4	4	19.06
75	9	5	6	3	98	61	65	...	126	102	19	5	16.92
7	5	2	3	1	18	13	7	...	20	16	3	1	11.79
5	...	...	...	...	5	6	9	...	15	15	...	...	25.68
1	...	1	...	1	3	...	2	...	2	2	...	...	6.02
1	...	...	1	...	2	8	5	...	13	13	...	...	27.31
2	2	...	1	1	6	8	9	...	17	14	1	2	17.06
...	...	...	...	...	...	...	1	...	1	1	...	...	15.50
1	...	...	...	...	1	7	2	...	9	6	...	3	22.50
...	...	...	...	...	...	1	5	...	6	5	...	1	17.80
2	...	...	...	...	2	2	2	...	4	4	...	...	14.81
9	...	...	1	...	10	15	9	...	24	22	1	1	15.00
9	3	1	...	2	15	6	8	...	14	10	3	1	14.01
15	...	...	...	...	15	17	22	...	39	29	6	4	18.03
9	...	...	...	...	9	16	15	...	*31	20	...	11	37.35
15	4	...	...	2	21	15	15	...	30	19	3	8	11.61
207	31	16	18	17	289	240	242	....	482	390	47	45	16.29

* Died at county farm, 10.

TABLE No. III.

SULLIVAN

TOWNS.	Population in 1890.	BIRTHS.									
		Sex.					Parentage.				
		Male.	Female.	Not stated.	Total.	Rate per 1,000.	Both American.	Both foreign.	American mother and foreign father.	American father and foreign mother.	Not stated.
Acworth.....	717	2	4	..	6	8.36	5	...	1	...	..
Charlestown..	1,466	8	17	..	25	17.05	19	2	..	3	1
Claremont ...	5,565	62	54	..	116	20.84	60	38	9	9	..
Cornish.....	954	9	8	..	17	17.81	14	...	2	...	1
Croydon.....	512	7	6	..	13	25.39	9	2	2	...	..
Goshen.....	384	5	1	..	6	15.62	5	...	...	1	..
Grantham ...	424	1	2	..	3	7.31	3	...	...	...	..
Langdon.....	305	1	1	..	2	6.55	2	...	...	...	..
Lempster	519	4	4	..	8	15.41	8	...	...	...	..
Newport.....	2,623	31	24	1	56	21.34	44	4	2	4	2
Plainfield....	1,173	....	3	..	3	2.55	2	1	...	...	..
Springfield...	540	4	6	..	10	18.51	9	...	1	...	..
Sunapee.....	900	13	12	..	25	27.77	18	4	3	...	..
Unity.....	653	7	8	..	15	23.69	10	...	2	...	3
Washington..	569	3	1	..	4	7.02	3	...	...	...	1
Total....	17,304	157	151	1	309	17.85	211	51	22	17	8

— *Continued.*

COUNTY.

MARRIAGES.						DEATHS.						
Both American.	Both foreign.	Husband American.	Wife American.	Not stated.	Total.	Sex.				Nativity.		
						Male.	Female.	Not stated.	Total.	American.	Foreign.	Not stated.
4	...	...	...	...	4	5	12	...	17	15	...	2
16	2	...	...	...	18	15	8	...	23	17	3	3
32	11	4	4	3	54	37	37	...	74	58	7	9
3	...	...	...	...	3	9	11	...	20	19	1	...
3	...	...	...	...	3	2	6	...	8	8	...	...
2	...	1	...	...	3	3	4	...	7	7	...	...
4	...	...	...	...	4	5	1	...	6	5	...	1
3	...	1	...	1	5	6	1	...	7	6	...	1
9	...	...	...	...	9	4	3	...	7	6	1	...
23	4	1	3	1	32	26	17	...	43	32	5	6
9	1	1	1	1	13	3	5	...	8	8	...	...
10	...	...	...	...	10	8	4	...	12	10	...	2
5	1	...	1	1	8	9	7	...	16	12	...	4
5	...	...	...	1	6	7	14	...	*21	15	1	5
3	...	...	...	...	3	7	4	...	11	11	...	...
131	19	8	9	8	175	146	134	...	280	229	18	33

* Died at county farm, 7.

TABLE No. III.
GRAFTON

TOWNS.	Population in 1890.	BIRTHS.									
		Sex.					Parentage.				
		Male.	Female.	Not stated.	Total.	Rate per 1,000.	Both American.	Both foreign.	American mother and foreign father.	American father and foreign mother.	Not stated
Alexandria...	679	8	3	..	11	16.20	5	...	1	1	4
Ashland	1,193	10	11	..	21	17.52	14	2	1	1	3
Bath	935	2	8	..	10	10.70	7	1	...	...	2
Benton	244	3	2	..	5	20.49	1	1	1	1	1
Bethlehem ...	1,267	12	12	..	24	18.94	12	10	1	...	1
Bridgewater..	332	6	1	..	7	21.08	6	1	...	...	...
Bristol	1,524	13	9	..	22	14.44	11	1	...	1	9
Campton	982	8	6	..	14	14.26	10	1	2	1	...
Canaan	1,417	16	7	..	23	16.23	17	1	3	...	2
Dorchester ...	379	1	3	..	4	10.55	3	1	...	...	...
Easton	248	6	5	..	11	44.35	9	1	1	...	...
Ellsworth	150	4	...	...	4	26.66	3	...	1	...	...
Enfield	1,439	14	6	..	20	13.90	17	...	1	2	...
Franconia....	594	4	1	..	5	8.42	4	...	1	...	...
Grafton	787	7	7	..	14	17.84	12	...	...	2	...
Groton	464	3	4	..	7	15.09	6	...	1	...	...
Hanover	1,817	12	13	..	25	13.76	15	4	2	2	2
Haverhill	2,545	26	18	..	44	17.29	26	8	6	1	3
Hebron	245	2	3	..	5	20.41	5	...	...	...	...
Holderness....	595	4	4	..	8	13.46	6	...	...	...	2
Landaff	499	3	5	..	8	16.03	5	2	...	1	...
Lebanon	3,763	43	30	1	74	19.67	46	11	5	12	...
Lincoln	110	...	2	..	2	18.18	1	...	...	1	...
Lisbon	2,060	15	14	..	29	14.08	18	2	4	5	...
Littleton	3,365	40	44	..	84	24.37	38	29	10	6	1
Livermore ...	155	...	...	...	...	...	...	...	...	...	...
Lyman	543	8	7	..	15	27.61	11	...	3	...	1
Lyne	1,154	12	13	..	25	21.66	24	...	...	1	...
Monroe	478	7	4	..	11	23.01	10	1	...	...	...
Orange	245	4	7	..	11	44.90	10	...	...	1	...
Orford	916	8	9	..	17	18.56	15	...	...	2	...
Piermont	709	3	4	..	7	9.87	4	...	1	2	...
Plymouth	1,852	16	14	1	31	16.74	21	1	4	2	3
Rumney	947	8	7	..	15	15.84	9	2	4	...	...
Thornton	632	3	5	..	8	12.67	7	...	...	1	...
Warren	875	9	4	1	14	16.00	8	4	...	2	...
Waterville....	39	...	...	...	...	...	...	...	...	...	...
Wentworth ..	698	7	6	..	13	18.91	9	3	1	...	...
Woodstock ...	341	3	6	1	10	29.33	7	1	2	...	...
Total....	37,217	350	304	4	658	17.68	432	88	56	48	34

— Continued.
COUNTY.

MARRIAGES.						DEATHS.							
						Sex.				Nativity.			
Both American.	Both foreign.	Husband American.	Wife American.	Not stated.	Total.	Male.	Female.	Not stated.	Total.	American.	Foreign.	Not stated.	Death-rate per 1,000.
4	1				5	4	4		8	6	1	1	11.78
8	1	1	1		11	9	12		21	17	1	3	17.60
8		1	1	1	11	5	8		13	12		1	13.90
2			1		3	2	3		5	4	1		20.49
5			2		7	8	8		16	15	1		12.63
1					1		4		4	4			12.05
15	1		2		18	20	10		30	23		7	19.69
7				1	8	10	6		16	13	3		16.28
10	1	1	2	1	15	13	7		20	16	2	2	14.11
2					2	3	3		6	6			15.83
1		1			2	1	1		2	2			8.06
1					1	1			1	1			6.67
13		1			14	15	9		24	19		5	16.68
2					2	3	6		9	9			15.15
7		1			8	9	11		20	17	1	2	25.41
4					4	3	3		6	5		1	12.93
12	1		2		15	14	17		31	26	1	4	17.06
17	2	2	3	3	27	36	35		*71	46	1	24	27.90
1					1	5			5	2		3	20.41
5					5	3	7		10	10			16.81
2			2		4	5	6		11	9	1	1	22.04
30	2	1	5	2	40	26	25		51	46	4	1	13.53
14		1	1	2	18	25	19		44	40	1	3	21.36
24	5	4	3	1	37	40	17		57	49	6	2	16.94
3					3	9	8		17	16	1		31.31
9					9	14	14		28	26		2	24.26
2			1		3	2	4		6	6			12.55
3					3		1		1	1			4.08
6					6	13	8		21	20	1		22.93
9					9	1	6		7	6	1		9.87
15			2	1	18	14	12		26	21	4	1	14.04
8		1	2		11	9	13		22	19	1	2	23.23
4					4	4	7	1	12	10		2	18.99
2	2				4	4	8		12	7	1	4	13.71
							1		1	1			25.64
5					5	3	6		9	6	1	2	12.89
3			1		4	2	3		5	3	1	1	14.67
264	16	15	31	12	338	336	312	1	648	539	35	74	17.41

* Died at county farm, 11.

TABLE No. III.

COÖS

TOWNS.	Population in 1890.	BIRTHS.									
		Sex.					Parentage.				
		Male.	Female.	Not stated.	Total.	Rate per 1,000.	Both American.	Both foreign.	American mother and foreign father.	American father and foreign mother.	Not stated.
Berlin	3,729	103	81	..	184	49.34	24	148	7	3	2
Carroll	812	3	4	..	7	8.61	3	2	1	1	..
Clarksville	325	4	4	..	8	24.61	5	..	1	..	2
Colebrook	1,736	14	13	..	27	15.55	15	1	4	6	1
Columbia	605	2	8	..	10	16.55	8	..	..	1	1
Dalton	596	..	2	..	2	3.35	2	..	..	..	..
Dummer	455	..	..	..	..	..	..	..	..	..	..
Errol	178	1	7	..	8	44.38	6	..	1	..	1
Gorham	1,710	30	32	1	63	36.84	12	31	11	2	2
Jefferson	1,062	14	8	..	22	20.71	10	5	4	2	1
Lancaster	3,373	24	26	..	50	14.82	20	16	2	5	7
Milan	1,029	9	7	..	16	15.54	9	1	..	1	5
Millsfield	62	..	1	..	1	16.12	..	..	..	1	..
Northumb'rl'd . . .	1,356	21	15	..	36	26.54	18	6	7	4	1
Pittsburg	669	7	6	..	13	19.43	2	..	..	2	9
Randolph	137	1	1	..	2	14.59	1	..	..	1	..
Shelburne	336	6	2	..	8	23.80	4	4	..	..	..
Stark	703	4	4	..	8	11.37	4	2	..	1	1
Stewartstown . . .	1,002	4	3	..	7	6.98	5	..	..	1	1
Stratford	1,128	11	15	..	26	23.04	8	11	3	3	1
Whitefield	2,041	22	18	..	40	9.79	13	18	2	2	5
Total	23,211	280	257	1	538	23.17	169	245	43	41	40

— Continued.

COUNTY.

MARRIAGES.						DEATHS.							
						Sex.				Nativity.			
Both American.	Both foreign.	Husband American.	Wife American.	Not stated.	Total.	Male.	Female.	Not stated.	Total.	American.	Foreign.	Not stated.	Death-rate per 1,000.
6	26	3	6	...	41	73	67	1	141	93	40	8	37.89
2	2	1	1	...	6	4	7	...	11	7	3	1	13.53
4	...	1	...	...	5	4	1	...	5	3	2	...	15.38
13	2	2	4	1	22	17	18	...	35	30	...	5	20.16
3	...	3	2	...	8	5	4	...	9	5	1	3	14.90
4	...	...	2	...	6	3	4	...	7	4	2	1	11.74
2	...	...	...	...	2	1	...	...	1	1	...	...	2.19
4	...	2	...	...	6	4	2	...	6	5	...	1	33.70
14	9	2	7	1	33	8	5	...	13	9	3	1	7.60
9	2	...	1	2	14	16	5	1	22	10	...	12	20.71
18	7	2	3	...	30	32	32	1	65	43	6	16	19.27
9	...	1	...	1	11	5	6	...	11	7	...	4	10.68
...	...	...	...	...	...	...	2	...	2	2	...	...	32.25
7	1	1	3	1	13	18	10	...	28	17	6	5	20.64
2	...	1	3	...	6	5	5	...	10	6	...	4	14.94
...	...	...	1	...	1	1	1	...	2	1	...	1	14.59
2	1	...	2	...	5	1	1	...	2	2	...	...	5.94
3	...	1	2	1	7	3	7	...	10	10	...	...	14.22
3	...	1	1	...	5	9	14	...	23	14	1	8	22.95
7	3	2	1	...	13	7	7	...	14	12	1	1	12.41
17	1	2	2	...	22	23	19	...	42	30	6	6	20.57
129	54	25	41	7	256	239	217	3	459	311	71	77	19.77

TABLE No. III.
RECAPITULATION

COUNTIES.	Population in 1890.	BIRTHS.									
		Sex.					Parentage.				
		Male.	Female.	Not stated.	Total.	Rate per 1,000.	Both American.	Both foreign.	American mother and foreign father.	American father and foreign mother.	Not stated.
Rockingham.	49,650	413	344	7	764	15.38	504	136	35	56	33
Strafford	38,442	414	396	4	814	21.14	364	328	67	35	20
Belknap	20,321	197	170	3	370	18.20	183	120	24	21	22
Carroll	18,124	130	146	3	279	15.39	211	26	11	21	10
Merrimack . . .	49,435	549	481	2	1,032	20.87	533	334	69	70	26
Hillsborough	93,247	1,073	1,044	27	2,144	22.99	730	991	152	148	123
Cheshire	29,579	313	279	10	602	20.35	357	138	42	47	18
Sullivan	17,304	157	151	1	309	17.85	211	51	22	17	8
Grafton	37,217	350	304	4	658	17.68	432	88	56	48	34
Coös	23,211	280	257	1	538	23.17	169	245	43	41	40
Total . . .	376,530	3,876	3,572	62	7,510	19.94	3,694	2,457	521	504	334

— *Continued.*

BY COUNTIES.

MARRIAGES.						DEATHS.							
Both American.	Both foreign.	Husband American.	Wife American.	Not stated.	Total.	Sex.				Nativity.			
						Male.	Female.	Not stated.	Total.	American.	Foreign.	Not stated.	Death-rate per 1,000.
349	49	37	22	50	507	503	485	3	991	784	92	115	19.95
309	84	19	19	35	466	420	386	3	809	644	113	52	21.04
127	25	23	14	11	200	211	177	4	392	286	24	82	19.29
152	13	14	12	9	200	181	159	1	341	293	10	38	18.81
272	80	32	29	17	430	483	468	..	951	788	95	68	19.23
498	351	99	68	27	1,043	959	964	34	1,957	1,373	373	211	20.98
207	31	16	18	17	289	240	242	..	482	390	47	45	16.29
131	19	8	9	8	175	146	134	..	280	229	18	33	16.18
264	16	15	31	12	338	335	312	1	648	539	35	74	17.41
129	54	25	41	7	256	239	217	3	459	311	71	77	19.77
2,438	722	288	263	193	3,904	3,717	3,544	49	7,310	5,637	878	795	19.41

BIRTHS.

TABLE No. IV.

Births by Counties, showing Proportion of Males to Females, 1891.

COUNTIES.	Males.	Females.	Excess of Males.	Excess of Females.	Sex not stated.
Rockingham	413	344	69	.....	7
Strafford	414	396	18	.....	4
Belknap	197	170	27	.....	3
Carroll	130	146	.....	16	3
Merrimack	549	481	68	.....	2
Hillsborough	1,073	1,044	29	.....	27
Cheshire	313	279	34	.....	10
Sullivan	157	151	6	.....	1
Grafton	350	304	46	.....	4
Coös	280	257	23	.....	1
Total	3,876	3,572	304	.....	62

TABLE No. V.

Twin Births by Months and Counties, 1891.

COUNTIES.	January.	February.	March.	April.	May.	June.	July.	August.	September.	October.	November.	December.	Total.
Rockingham.....	..	1	1	..	..	..	..	2	..	2	2	1	9
Strafford *.....	1	..	2	..	..	..	..	..	2	1	1	1	8
Belknap.....	1	..	1	..	1	..	..	..	..	..	..	..	3
Carroll.....	..	1	1	..	..	..	..	..	..	..	..	..	2
Merrimack.....	..	..	..	..	..	3	3	..	1	3	..	..	10
Hillsborough.....	1	..	1	3	3	2	4	1	2	..	..	3	20
Cheshire.....	..	..	..	2	1	2	2	..	2	..	..	..	9
Sullivan.....	..	..	..	1	1	..	..	1	..	..	..	..	3
Grafton.....	..	1	1	1	1	..	1	..	1	..	1	..	7
Coös.....	..	..	3	..	1	2	2	1	..	..	1	1	11
Total.....	3	2	10	8	8	9	12	5	8	6	5	6	82

* In April one set of triplets.

TABLE No. VI.

Twin Births by Sex and Parentage, by Counties.

COUNTIES.	SEX.		PARENTAGE.							Living children.	Still-born children.	Not stated.
	Males.	Females.	Both American.	Both foreign.	American mother and foreign father.	American father and foreign mother.	Not stated.	Total.				
Rockingham.....	15	3	6	1	....	2	..	9	18	...	
Strafford.....	10	6	2	4	1	1	..	8	13	3	..	
Belknap.....	4	2	2	...	...	...	1	3	5	1	..
Carroll.....	4	....	1	...	1	...	...	2	4	...	
Merrimack.....	15	5	6	3	1	...	...	10	18	..	2
Hillsborough.....	13	27	4	14	2	...	...	20	40	...	
Cheshire.....	4	14	6	2	1	...	...	9	17	1	..
Sullivan.....	6	....	1	2	...	...	...	3	4	2	..
Grafton.....	13	1	4	2	...	...	1	7	11	3	..
Coös.....	14	8	1	5	4	...	1	11	20	2	..	
Total.....	98	66	33	33	10	3	3	82	150	12	2	

TABLE No. VII.

Triplet Births by Sex and Parentage.

COUNTIES.	SEX.		PARENTAGE.		Living.	Still-born.	Total.
	Male.	Female.	American father, for mother.	Total.			
Strafford	1	2	1	3	2	1	3

TABLE
Births by Sex and

COUNTIES.	January.	February.	March.	April.	May.
Rockingham.. Males.....	28	33	33	35	43
Females	27	27	27	30	21
Not stated	1				1
Strafford..... Males.....	42	33	37	27	29
Females	24	28	43	40	37
Not stated		1			1
Belknap..... Males.....	18	15	14	15	19
Females	12	13	15	17	12
Not stated	1				
Carroll..... Males.....	13	18	12	10	8
Females	8	9	12	11	11
Not stated	1				
Merrimack... Males.....	43	37	47	62	40
Females	46	31	33	41	43
Not stated					
Hillsborough.. Males.....	87	85	101	89	97
Females	88	78	98	89	89
Not stated	1	1	1	1	5
Cheshire..... Males.....	25	21	30	37	20
Females	22	19	19	22	27
Not stated		1		1	2
Sullivan..... Males.....	14	5	23	12	14
Females	10	8	10	13	12
Not stated					
Grafton..... Males.....	29	23	24	29	37
Females	32	19	27	24	29
Not stated	1			1	1
Cooks..... Males.....	28	19	32	19	30
Females	20	21	42	26	20
Not stated					
Total..... Males.....	327	289	353	335	337
Females	289	253	326	313	301
Not stated	5	3	1	3	10
Grand total	621	545	680	651	648

No. VIII.

Month, by Counties, 1891.

June.	July.	August.	September.	October.	November.	December.	Not stated.	Total.	Grand total.
25	36	42	27	28	36	45	2	413	764
30	31	42	32	25	22	29	1	344	
1	1	1	.....	1	1	.....	.....	7
33	29	36	41	41	34	31	1	414	814
37	40	27	34	29	29	27	1	396	
1	.....	1	.....	.....	.....	.....	.....	4
13	19	24	20	15	12	10	3	197	370
17	14	17	14	16	13	10	.....	170
.....	1	.....	.....	.....	.....	1	.....	3
9	7	14	17	6	6	10	130	279
19	12	16	14	16	6	11	1	146	
.....	.....	1	.....	1	.....	.....	.....	3
65	47	46	46	43	41	31	1	549	1,032
39	49	45	31	48	34	41	.....	481
.....	.....	1	1	.....	.....	.....	.....	2
67	98	96	92	81	81	97	2	1,073	2,144
81	83	97	88	79	75	98	1	1,044	
2	4	5	1	4	1	1	.....	27
22	20	32	36	21	33	15	1	313	602
26	30	28	23	20	25	18	.....	279
.....	1	1	1	2	.....	1	.....	10
17	9	14	11	14	12	12	157	309
9	18	15	16	12	15	13	.....	151
.....	.....	.....	.....	.....	.....	1	.....	1
29	23	33	34	27	36	26	350	658
18	36	34	21	24	27	13	.....	304
.....	.....	.....	.....	1	.....	.....	.....	4
17	20	26	30	18	16	25	280	538
22	23	15	17	19	15	16	1	257	
.....	.....	.....	.....	.....	.....	1	.....	1
297	308	363	354	294	307	302	10	3,876	7,510
298	336	336	290	288	261	276	5	3,572	
4	7	10	3	9	2	5	.....	62
599	651	709	647	591	570	583	15	7,510	7,510

MARRIAGES.

TABLE No. IX.

Marriages by Counties and Nativity, 1891.

COUNTIES.	Both American.	Both foreign.	Groom American.	Bride American.	Not stated.	Total.
Rockingham	349	49	37	22	50	507
Strafford	309	84	19	19	35	466
Belknap	127	25	23	14	11	200
Carroll	152	13	14	12	9	200
Merrimack	272	80	32	29	17	430
Hillsborough	498	354	99	68	24	1,043
Cheshire	207	31	16	18	17	289
Sullivan	131	19	8	9	8	175
Grafton	264	16	15	31	12	338
Coös	129	54	25	41	7	256
Total	2,438	725	288	263	190	3,904

TABLE No. X.

Marriages by Months and Counties, 1891.

COUNTIES.	January.	February.	March.	April.	May.	June.	July.	August.	September.	October.	November.	December.	Not stated.	Total.
Rockingham.....	46	30	34	34	40	41	40	46	43	46	54	52	1	507
Strafford	33	22	31	39	36	40	33	30	48	43	57	53	1	466
Belknap.....	16	17	10	20	13	18	7	16	22	15	28	18	..	200
Carroll.....	18	14	13	11	15	16	11	27	15	17	25	15	3	200
Merrimack	27	21	23	33	20	42	29	35	49	54	57	40	..	430
Hillsborough ...	96	87	34	90	80	85	66	81	116	110	130	67	1	1,043
Cheshire	19	15	16	17	19	35	22	25	28	31	37	24	1	289
Sullivan.....	10	15	4	8	13	15	14	10	19	25	24	17	1	175
Grafton.....	27	17	36	18	22	33	21	31	26	33	32	42	..	338
Coös	13	10	16	23	17	21	19	21	25	33	23	27	8	256
Total	305	248	217	293	275	346	262	322	391	407	467	355	16	3,904

TABLE No. XI.
Marriages by Ages and Counties, 1891.

COUNTIES.		Under 15.	15 to 20.	20 to 25.	25 to 30.	30 to 35.	35 to 40.	40 to 45.	45 to 50.	50 to 55.	55 to 60.	60 to 70.	70 to 80.	Over 80.	Not stated.	Total.
Rockingham	Males	14	203	130	65	37	19	10	12	4	8	2	3	507		
	Females	129	188	85	49	16	12	9	9	1	2	2	6	507		
Strafford	Males	15	206	111	54	24	17	8	5	6	11	6	2	466		
	Females	112	177	87	31	19	11	10	6	3	6	1	4	466		
Belknap	Males	8	72	46	28	20	9	3	7	3	2	1	1	200		
	Females	51	76	33	16	10	2	5	4	1	1	1	1	200		
Carroll	Males	5	69	52	31	12	10	8	5	4	1	1	3	200		
	Females	58	65	32	20	7	4	6	2	1	1	1	5	200		
Merrimack	Males	21	155	108	54	39	19	8	5	3	11	5	2	430		
	Females	113	154	76	35	21	10	5	7	1	5	1	2	430		
Hillsborough	Males	57	408	281	125	64	36	21	22	12	9	3	5	1,043		
	Females	242	442	187	80	33	20	10	8	7	3	1	11	1,043		
Cheshire	Males	12	114	79	34	14	17	4	3	4	5	3	2	289		
	Females	80	102	56	25	14	2	2	4	2	1	1	2	289		

Sullivan	Males	4	79	33	20	11	10	6	3	3	5	4	175
	Females	41	65	35	9	9	5	4	2	1	1	1	175
Grafton	Males	12	118	84	48	24	15	11	10	4	7	5	338
	Females	98	112	57	24	14	8	10	4	2	4	1	338
Coös	Males	9	96	84	33	12	10	3	3	5	1	1	256
	Females	87	95	40	8	11	4	4	2	3	3	2	256
Total	Males	157	1,520	1,008	492	257	162	82	75	41	62	31	3,904
	Females	3	1,011	688	297	154	78	63	48	19	26	3	3,904
Grand total		3	1,168	1,696	789	411	240	145	123	60	88	34	7,808

DIVORCES.

TABLE No. XIII.

Divorces decreed by the Supreme Court of New Hampshire, in the year 1891, as returned by the Clerks of the several Counties.

COUNTIES.	CAUSES OF DIVORCE.													LIBELLANTS.						
	Conviction of crime and imprisonment.	Abandonment.	Abandonment and adultery.	Absent three years.	Adultery.	Desertion.	Extreme cruelty.	Extreme cruelty and willing absence.	Extreme cruelty and habitual drunkenness.	Habitual drunkenness and abandonment.	Habitual drunkenness.	Impotency.	Willing absence and refusal to cohabit.	Treatment injurious to health.	Nullity.	Treatment injurious to health and to reason.	Willing absence three years.	Males.	Females.	Total of each county.
Rockingham	19				13	13						2						15	32	47
Strafford	14				8	5						1					2	14	16	30
Belknap	5				15	10						5					2	14	23	37
Carroll	9				5							3						7	10	17
Merrimack	13				11	18						8					2	10	42	52
Hillsborough	52				15	33			5			2		2				30	85	115
Cheshire	10			2	10	4						2		1			3	13	19	32
Sullivan	3				1	5											4	7	6	13
Grafton	1	15			16	13						1	1	2				26	23	49
Coos	2			1	3	9						4		1				10	10	20
Total	1142			3	97	110			5			34	1	6			13	146	266	412

TABLE

Causes upon which Divorces have been decreed for nine

COUNTIES.	Abandonment.	Abandonment and adultery.	Absent three years.	Absent three years and abandonment.	Adultery.	Conviction of crime and imprisonment.	Desertion and bigamy.	Extreme cruelty.	Extreme cruelty and abandonment.	Extreme cruelty and adultery.	Extreme cruelty and habitual drunkenness.	Absence of wife from State ten years together.	Desertion.
Rockingham.....	138..	1	..	81	4..	91	..	..	1	..	..	..	..
Strafford.....	118..	14	..	85	1	1	107	..	..	..	..	..	..
Belknap.....	54..	11	..	66	2..	70	..	..	..	..	..	..	..
Carroll.....	64..	3	..	39	2..	28	..	..	1	..	2	..	..
Merrimack.....	129..	20	..	94	3..	151	..	..	..	..	..	..	..
Hillsborough.....	330	3	16..	183	6..	271	2	4	13	..	..	..	..
Cheshire.....	115	1	1	3	64	..	73	1	3	6	1..	..	..
Sullivan.....	54	..	..	54	..	60	..	..	..	..	..	..	..
Grafton.....	121	..	..	85	2..	90	..	..	..	..	..	..	..
Coös.....	32..	7	1	41	1..	56	..	..	..	..	..	..	..
Total.....	1,155	473	4	792	21	1	997	3	7	21	1	2	..

No. XIV.

years, 1882 to 1891, inclusive, by Counties.

Extreme cruelty, habitual drunkenness, and adultery.	Habitual drunkenness.	Habitual drunkenness and adultery.	Habitual drunkenness and desertion.	Impotency.	Joining religious sect and refusal to cohabit.	Nullity.	Prior marriage.	Refusal to cohabit.	Treatment injurious to health.	Treatment injurious to health and extreme cruelty.	Treatment injurious to health and to reason.	Treatment injurious to reason.	Willing absence three years.	Willing absence and refusal to cohabit.	No cause assigned.	Total.
...	40	...	...	1	...	...	...	...	3	...	...	...	3	...	...	363
...	31	...	...	1	...	2	...	1	1	...	...	...	2	...	...	364
...	24	...	...	...	...	...	...	...	1	...	...	...	4	...	...	232
...	12	...	...	1	...	...	...	...	...	...	...	...	1	...	...	153
...	49	...	...	4	...	...	...	...	3	...	...	2	14	...	2	471
1	59	2	2	...	...	...	...	...	9	1	1	...	1	6	...	910
...	20	...	...	1	...	...	1	...	8	...	2	...	5	...	...	305
...	4	...	...	1	1	...	...	...	2	...	...	...	8	...	...	184
...	15	...	...	1	...	...	...	...	3	...	...	...	...	...	...	317
...	12	...	...	4	...	...	...	...	1	...	...	...	3	...	...	158
1	266	2	2	14	1	2	1	1	31	1	3	2	41	6	2	3,457

TABLE
CAUSES OF DEATH ARRANGED

TOWNS IN ROCKINGHAM COUNTY.	CLASS I. —																						
	ORDER 1. — Miasmatic.																						
	Carbuncle.	Cholera, Asiatic.	Cholera, Sporadic.	Cholera Infantum.	Cholera Morbus.	Croup (Pseudo-membranous).	Diphtheria.	Diarrhea.	Dysentery.	Erysipelas.	Fever, Bilious.	Fever, Cerebro-spinal.	Fever, Intermittent.	Fever, Malarial.	Fever, Typhoid.	Fever, Typho-malarial.	Fever, Unspecified.	Fever, Yellow.	Influenza (Epidemic).	Measles.	Mumps.	Metria (Puerperal Fever).	Pertussis.
Atkinson															1								
Auburn							1			1					1								
Brentwood																							
Candia				1				1			1												
Chester															1				1				
Danville				1																			
Deerfield				2	1														1				
Derry				3			2								4				2				
East Kingston				1											1				1				
Epping				1			3	4							2				1				
Exeter				3					2						1								
Fremont				1																			
Greenland															1				1				
Hampstead									1														
Hampton						12													1				
Hampton Falls																			1				
Kensington															1								
Kingston							2																
Londonderry																							
Newcastle																							
Newington							2												1				
Newmarket				14		5	1								2				1	2			
Newton															2	1			1	1			
North Hampton																							
Northwood															1	1							
Nottingham																			1				
Plaistow				2			1								1				1				
Portsmouth				11			2	1		3					3								1
Raymond				1											1								
Rye						1	1		1														
Salem				2					1						2				3				
Sandown																							
Seabrook			1			2	8								1				1				
South Hampton							1												1				
S. Newmarket				3																			
Stratham																			1				
Windham															1								

No. XV.

BY TOWNS AND COUNTIES.

ZYMOTIC DISEASES.

				ORDER 2. — Enthetic.				ORDER 3. — Dietic.				ORDER 4. — Parasitic.				Total for Class I.												
Tonsillitis.	Scarlatina.	Small-pox.	Varicella.	Total.		Glanders.	Gonorrhea.	Hydrophobia.	Malignant Pustule.	Septicæmia.	Syphilis.	Total.		Alcoholism.	Delirium Tremens.	Inanition.	Purpura and Scurvey.	Total.		Apthæ.	Worms.	Other Parasites.	Total.		Male.	Female.	Sex not stated.	Total.
				M.	F.							M.	F.					M.	F.				M.	F.				
.	.	.	.	1	.	.	.	.	.	1	.	.	1	.	.	.	.	.	.	.	.	.	.	.	1	.	.	1
.	.	.	.	2	1	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	2	2	.	.	4
.	.	.	.	2	1	.	.	.	.	1	.	.	.	.	.	.	.	.	.	.	.	.	.	2	1	.	.	3
.	.	.	.	1	1	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	1	1	.	.	2
.	.	.	.	1	1	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	1	1	.	.	1
.	.	.	.	1	3	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	1	3	.	.	4
.	.	.	.	5	6	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	5	6	.	.	11
.	.	.	.	2	1	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	2	1	.	.	3
.	.	.	.	6	5	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	6	5	.	.	11
.	.	.	.	1	5	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	1	5	.	.	6
.	.	.	.	1	1	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	1	1	.	.	1
.	.	.	.	1	1	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	1	1	.	.	2
.	.	.	.	1	1	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	1	1	.	.	1
.	.	.	.	5	7	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	5	7	.	.	12
.	.	.	.	1	1	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	1	1	.	.	1
.	.	.	.	1	1	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	1	1	.	.	1
.	.	.	.	2	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	2	.	.	.	2
.	3	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	3	.	.	3
.	.	.	.	11	14	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	11	14	.	.	25
.	.	.	.	3	2	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	3	2	.	.	5
.	.	.	.	1	1	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	1	1	.	.	2
.	.	.	.	1	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	1	.	.	.	1
.	.	.	.	2	3	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	2	3	.	.	5
.	.	.	.	11	10	.	.	.	.	1	.	1	1	.	.	.	.	1	.	.	.	.	.	12	11	.	.	23
.	.	.	.	2	.	.	.	.	.	1	.	1	.	.	.	.	.	.	.	.	.	.	.	1	2	.	.	3
.	.	.	.	3	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	3	.	.	.	3
.	.	.	.	4	4	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	4	4	.	.	8
.	10	3	.	.	.	1	.	1	1	.	.	.	.	.	.	.	.	.	.	10	4	.	.	14
.	.	.	.	2	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	2	.	.	.	2
.	.	.	.	1	2	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	1	2	.	.	3
.	.	.	.	1	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	1	.	.	.	1
.	.	.	.	1	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	1	.	.	.	1

— Continued.

CLASS III.—LOCAL DISEASES.

ORDER 1. — Nervous System.										ORDER 2. — Circulatory System.				ORDER 3. — Respiratory System.												
Cephalitis.	Cerebritis.	Apoplexy.	Paralysis.	Insanity.	Chorea.	Epilepsy.	Tetanus.	Convulsions.	Brain Diseases.	M.	F.	Pericarditis.	Aneurism.	Heart Disease.	M.	F.	Epistaxis.	Laryngitis.	Bronchitis, Acute.	Bronchitis, Chronic.	Pleurisy.	Pneumonia.	Asthma.	Lung Diseases.	M.	F.
		1								1				1	1											
	1	1								2				1	1		1		1			1		1	1	
			2			1			1	2	2			1	1											
		1												1	1											
	1					1			1	4	1			1												
	1													2		2										
		1	5		1			3	5	5				2	2											
			2	2					3	2				3	1	2										
		1	2						2					3	2	1										
		5	2					3	6	4				5	4	1		3		1	1	1		4	2	
3		3	3					1	2	8				8	7	1		4				3		2	5	
		1	1						1	1												1		1		
														1		1		2							2	
														5	1	4										
	1		3						2	2				3	2	1						1			1	
										1															1	
		2	3				1		2	4				2	1	1									1	
														2	2				1			2		2	1	
2			1						1	2				2	2							1	1	2		
														1		1										
														2	1	1						1		1		
														1												
														1		1										
														2	1	1						1		1		
3			2					2	4	3				3	1	2						2	1		3	
		1	1						1	1				1		1						3			2	
		1							1	2				3		3			1		4			3	2	
		1							1	1				2	1	1					1			1	1	
		2	2			1				5				1	1											
7	1	8	4			1	3	4	19	9	1	1	1	18	9	11		5	2		26		13	20		
						1				1				1	1			1		1	1			2	1	
			2						2													2	1		2	
		1	3						2	2				6	4	2			1		3		1	3	2	
		1								1																
1		4	1						3	3				1		1			1						1	
		1								1				2	1	1			1						1	
		1								1				5	3	2					1				1	
1										1				2	2							1			1	
		1	1						1	1								1				5		3	3	

TABLE No. XV.

TOWNS IN ROCKINGHAM COUNTY.	CLASS III. — LOCAL																	
	ORDER 4. — Digestive Organs.																	
	Gastritis.	Enteritis.	Peritonitis.	Ascites.	Ulceration of Intestines.	Hernia.	Ileus.	Intussusception.	Stricture of Intestines.	Fistula.	Stomach Diseases.	Pancreas Diseases.	Hepatitis.	Jaundice.	Liver Diseases.	Spleen Diseases.	Bowel Diseases.	Total.
Atkinson...																		
Auburn...																		
Brentwood...																		
Candia...			1														1	
Chester...	1														1		1	
Danville...																		
Deerfield...															1		1	
Derry...	1	1												1			1	2
East Kingston...													1					1
Epping...		1	1														1	1
Exeter...	2												1			1	3	1
Fremont...																		
Greenland...											1						1	
Hampstead...															1		1	
Hampton...																		
Hampton Falls...	1										1							2
Kensington...																		
Kingston...																		
Londonderry...		1									2				2		2	3
Newcastle...														1				1
Newington...		1					1											2
Newmarket...			2								1							3
Newton...																		
North Hampton...																		
Northwood...			1											1	1		2	1
Nottingham...																		
Plaistow...		1														1	1	1
Portsmouth...	1	1	2								1			1			4	2
Raymond...		1					1										1	1
Rye...																		
Salem...		1															1	
Sandown...																		
Seabrook...											1							1
South Hampton...																		
South Newmarket...																		
Stratham...											1						1	
Windham...	1	1											1				1	2

—Continued.

DISEASES. — Continued.

ORDER 5. — Urinary Organs.										ORDER 6. — Generative Organs.	ORDER 7. — Osseous and Locomotor System.	ORDER 8. — Integumentary System.	Total for Class III.										
Nephritis.	Ischuria.	Nephria (Bright's Disease).	Diabetes.	Calculus (Gravel, etc.)	Cystitis.	Prostate, Disease of.	Kidney Diseases.	Bladder, Diseases of.	Testicles, Disease of.	Total.	Ovarian Dropsy. Disease of Uterus.	Total.	Bones, Diseases of. Joint Diseases.	Vertebrae, Diseases of.	Total.	Phlegmon. Ulcer.	Skin Diseases.	Total.	Male.	Female.	Sex not stated.	Total.	
										M. F.					M. F.			M. F.					
		1			1					3										1	1		2
		1			1					1										3	2		5
		1								2										6	12		8
		1	2		1					1	1									6	7		13
		2																		1	4		5
		1								2	1									12	7		19
		2								1	1									7	9		16
		1						1		1	1									4	4		8
										3										16	9		25
																				17	15		32
						1				1										2	1		3
																				2	4		6
		2								2										2	4		6
																				6	4		10
																				4			4
																				3	5		8
		2	1		1					3	1									4	1		5
																				10	6		16
																				2	2		2
																				2	3		5
		1								1		1								6	12		18
		1			1					1	1									3	5		8
		1								1										5	2		7
1		1			1					3		1	1							8	8		16
																				2	3		5
																				2	7		9
4		7	1							9	3		1	1						54	46		100
		2								2										4	3		7
																				6	1		7
																				10	6		16
		3			1					2	2										1		1
																				6	7		13
																				2	2		4
																				4	3		7
																				4	1		5
																				5	6		11

TOWNS IN ROCKINGHAM COUNTY.		CLASS IV.—DEVELOPMENTAL DISEASES.																	
		ORDER 1.—Of Children.								ORDER 2.—Of Women.	ORDERS 3 and 4.		Total for Class IV.						
		Still-born.	Debility, Infantile.	Debility, Premature Birth.	Cyanosis.	Spina Bifida.	Other Malformations.	Teething.	Imnutrition.	Total.		Childbirth.	Parameia.	Total.	Old Age.	Atrophy and Debility.	Male.	Female.	Total.
										M.	F.								
Atkinson								1	1						2	1	1	3	4
Auburn										1					2	3	4	7	11
Brentwood			1												2	2	3	4	7
Candia	1	1						1	1						2	3	3	4	7
Chester			1							1					1	2	1	4	5
Danville																			
Deerfield															2			2	2
Derry					1			2	3						2	1		5	6
East Kingston			1				1		2								2	1	3
Epping	4		1					4	1	1		1			3	2	6	5	11
Exeter	1									1					4	2		7	7
Fremont						1		1									1		1
Greenland	2							1	1						1	2	3	2	5
Hampstead																			
Hampton														1	3		1	3	4
Hampton Falls.															1			1	1
Kensington																1			
Kingston														1	2		3		3
Londonderry														2	2		2	2	4
Newcastle														1			1		
Newington															1			1	1
Newmarket	1							1						5	3	1	7	3	10
Newton								1	1					1	1	2	2	3	5
North Hampton																			
Northwood								1		1					1			2	2
Nottingham.																			
Plaistow	1	1							1	1					1	1	2	2	4
Portsmouth.	7	1	1					5	12	2				1	6	4	5	17	30
Raymond			1						1								1	1	2
Rye														1	1			1	2
Salem	1									1						3		4	4
Sandown		1							1					1			2		2
Seabrook		1				1		2	4							1	4	1	5
South Hampton															2		2		2
South Newmarket															1	1	1	1	2
Stratham.														1		2	1	2	3
Windham														1		2	1	2	3

— Continued.

CLASS V.—VIOLENT DEATHS.																												Grand Total for all Classes.			
ORDER 1.—Accident and Negligence.							OR- DER 2.	ORDER 3.—Suicide.							ORDER 4.— Various.				Total for Class V.												
Fractures and Contusions.	Wounds, Unspecified.	Burns and Scalds.	Poison.	Drowning.	Suffocation.	Various.	Total.		Homicide.		Wounds, Unspecified.	Wounds, Pistol or Gunshot.	Wounds, Knife.	Poison.	Drowning.	Hanging.	Otherwise.	Total.		Violent, not Classed.	Cause not Reported or Unclassified.		Male.	Female.	Total.	Male.	Female.	Not stated.	Total.		
							M.	F.	M.	F.								M.	F.		M.	F.								M.	F.
																						1	2	1	2	3	8	7		2	
																						1	1	1	1	2	14	14		15	
																						1	1	1	1	2	13	14		28	
																											10	14		24	
1						1	1															2	1	1	1	1	2	6		8	
				1		1	1	1														2	1	2	2	4	16	19		35	
																							1	1	2	20	22			42	
																											8	5		13	
																1	1							1	1	1	31	22			53
				1			1															3	5	4	5	9	28	33		61	
																											4	3		7	
																											7	8		15	
																	1	1				2	3	3	3	6	6	8		14	
																						1	1	1	1	2	14	18		32	
																												6		6	
																												4	6		10
				1			2															1	1	3	1	4	16	13		29	
																											1	3		4	
																	1	1					1	1	1	2	3	9		12	
																						2		2		2	30	36		66	
																											9	12		21	
				1			1															4	2	4	2	6	9	4		13	
1							1																			2	15	15		30	
							1																			1	4	5		9	
4	2			1		1	4	4									1	1								1	8	12		20	
				1			1																								
																								</							

*Classed with males.

TABLE No. XV.

TOWNS IN STRAFFORD COUNTY.	CLASS II.—CONSTITUTIONAL DISEASES.																
	ORDER 1.—Diathetic.									ORDER 2.—Tuber- cular.					Total for Class II.		
	Geut.	Dropsy.	Anemia.	Cancer, Various.	Cancer of Breast.	Cancer of Stomach.	Cancer of Uterus.	Noma (Canker).	Mortification.	Rheumatism.	Total.	Scrofula.	Tubes Mesenterica.	Phthisis.	Hydrocephalus.	Tubercular Meningitis.	Total.
											M. F.						M. F. Male. Female. Total.
Barrington												1	3			3	1 3 1 4
Dover		3	4	5	1		1		1		6 9			37		1 18	20 24 29 53
Durham.....			1	1							2			5		1	2 4 4 8
Farmington				2				1			2 1			6			4 2 6 3 9
Lee														2			1 1 1 1 2
Madbury														2			1 1 1 1 2
Middleton														3			2 1 2 1 3
Milton				1							1			5			4 1 4 2 6
New Durham.....														3			2 1 2 1 3
Rochester		2	1	4						1	4 4			17	1		7 11 11 15 26
Rollinsford				1		1				1	1			3			3 1 4 5
Somersworth		1									1			8			2 6 2 7 9
Strafford.....					1						1 1						1 1 1 2

—Continued.

CLASS III.—LOCAL DISEASES.

ORDER 1. — Nervous System.											ORDER 2. — Circulatory System.					ORDER 3. — Respiratory System.										
Cephalitis.	Cerebritis.	Apoplexy.	Paralysis.	Insanity.	Chorea.	Epilepsy.	Tetanus.	Convulsions.	Brain Diseases.	Total.	Pericarditis.	Aneurism.	Heart Diseases.	Total.	Epistaxis.	Laryngitis.	Bronchitis, Acute.	Bronchitis, Chronic.	Pleurisy.	Pneumonia.	Asthma.	Lung Diseases.	Total.			
M.	F.												M.	F.								M.	F.			
6	2	16	4	5				1	2	1			28	11	18		1	5	2	4			4	1		
								2	2	3	1		1	1					20	4		14	14			
		1	3					1	1	4			3	2	1		1	1	6		1	6	3			
		1							1				1	1					2				2			
																				3		3				
	1		1						1	1			1	1												
	1							1	2	1			3	2	1					3		2	1			
		1							1	1										1		1				
2	1	1	3					1	5	3			16	10	6		1	1	1	14		1	9			
1	2								3				2		2											
3		1	2					5	3	5			3	3			2		12			4	1			
		2						1	2	1			1	1			1					7	7			
																						1				

TABLE No. XV.

TOWNS IN STRAFFORD COUNTY.	CLASS III. — LOCAL															
	ORDER 4. — Digestive Organs.															
	Gastritis.	Enteritis.	Peritonitis.	Ascites.	Ulceration of Intestines.	Hernia.	Ileus.	Intussusception.	Stricture of Intestines.	Fistula.	Stomach Diseases.	Pancreas Diseases.	Hepatitis.	Jaundice.	Liver Diseases.	Spleen Diseases.
	Bowel Diseases.	Total.	M.	F.												
Barrington																
Dover	1	3	4		1						1			1	2	7
Durham			1	1							2					1
Farmington					1											1
Lee																
Madbury																
Middleton			1													1
Milton	1	1														1
New Durham																
Rochester		1	2		3					1					1	3
Rollinsford				1					1							1
Somersworth	1	1														1
Strafford	2									1						1

— Continued.

DISEASES. — Continued.

ORDER 5. — Urinary Organs.										ORDER 6. — Generative Organs.		ORDER 7. — Osseous and Locomotory System.		ORDER 8. — Integumentary System.		Total for Class III.												
Nephritis.	Ischuria.	Nephria (Bright's Disease).	Diabetes.	Calculus (Gravel, etc.).	Cystitis.	Prostate, Disease of.	Kidney Diseases.	Bladder, Diseases of.	Testicles, Disease of.	Total.		Ovarian Dropsy.	Disease of Uterus.	Total.	Bones, Diseases of.	Joint Diseases.	Vertebra, Diseases of.	Total.		Phlegmon.	Ulcer.	Skin Diseases.	Total.		Male.	Female.	Sex not stated.	Total.
										M.	F.							M.	F.				M.	F.				
1										1				1										5	3		8	
4	12				1					9	8	3	1	4						1			65	64		129		
																								5			5	
1	2				1		2			4	2												14	14		28		
					1					1														4	2		6	
																								3			3	
	1									1														3	2		5	
	1	1					1			3													10	4		14		
																								2			2	
1		2								1	2												28	25		53		
1										1														9	4		13	
	1				1					2													18	17		35		
1										1														5	4		9	

TABLE No. XV.

TOWNS IN STRAFFORD COUNTY.	CLASS IV. — DEVELOPMENTAL DISEASES.																
	ORDER 1. — Of Children.								ORDER 2. — Of Women.		ORDERS 3 and 4.				Total for Class IV.		
	Still-born.	Debility, Infantile.	Debility, Premature Birth.	Cyanosis.	Spina Bifida.	Other Malformations.	Teething.	Imnutrition.	Total.	Childbirth.	Paramenia.	Total.	Old Age.	Atrophy and Debility.	Male.	Female.	Total.
	M.	F.											M.	F.	M.	F.	
Barrington													1				1
Dover	10	5	3					9	17	10	1	1	3	10	3	5	23
Durham													1				1
Farmington	5	1						2	4					1	2	3	6
Lee	1		1					2							1	2	3
Madbury														1		1	1
Middleton	1							1					1	1		2	3
Milton			1					1	1	1				1	1	2	4
New Durham			1					1					2	1		4	5
Rochester	2	3				1		6	6	6	2	4	4	1	3	7	24
Rollinsford	1		1					1	1		1	1	1	1	1	2	6
Somersworth	8	3						1	6	6			1	6	4	11	27
Strafford		1						1					1	2		2	4

— Continued.

CLASS V. — VIOLENT DEATHS.																							Grand Total for all Classes.																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																					
ORDER 1. — Accident and Negligence.						OR- DER 2.		ORDER 3. — Suicide.						ORDER 4. — Various.				Total for Class V.																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																										
Fractures and Contusions.						Wounds, Unspecified.						Burns and Scalds.						Poison.		Drowning.		Suffocation.		Various.		Total.		Homicide.		Wounds, Unspecified.						Wounds, Pistol or Gunshot.		Wounds, Knife.		Poison.		Drowning.		Hanging.		Otherwise.		Total.		Violent, not Classed.		Cause not Reported or Un- classified.		Male.		Female.		Total.		Male.		Female.		Not stated.		Total.																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																										
M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.

* Classed with males.

TABLE No. XV.

TOWNS IN BELKNAP COUNTY.	CLASS I.																						
	ORDER 1. — Miasmatic.																						
	Carbuncle.	Cholera, Asiatic.	Cholera, Sporadic.	Cholera Infantum.	Cholera Morbus.	Croup (Pseudo-membranous).	Diphtheria.	Diarrhea.	Dysentery.	Erysipelas.	Fever, Bilious.	Fever, Cerebro-spinal.	Fever, Intermittent.	Fever, Malarial.	Fever, Typhoid.	Fever, Typho-malarial.	Fever, Unspecified.	Fever, Yellow.	Influenza (Epidemic).	Measles.	Mumps.	Metria (Puerperal Fever).	Pertussis.
Alton.																							
Barnstead				1					1														
Belmont				2		1													1				
Centre Harbor.																							
Gilford				4	1	2				1					1				1				
Gilmanton									1														
Laconia			32		2	20	1	1							1				3			1	
Meredith.										2													
New Hampton.						1																	
Sanbornton.															1								
Tilton															2				1				

— Continued.

CLASS III. — LOCAL DISEASES.

ORDER 1. — Nervous System.										ORDER 2. — Circulatory System.				ORDER 3. — Respiratory System.									
Cephalitis.	Cerebritis.	Apoplexy.	Paralysis.	Insanity.	Chorea.	Epilepsy.	Tetanus.	Convulsions.	Brain Diseases.	Total.	Pericarditis.	Aneurism.	Heart Diseases.	Total.	Epistaxis.	Laryngitis.	Bronchitis, Acute.	Bronchitis, Chronic.	Pleurisy.	Pneumonia.	Asthma.	Lung Diseases.	Total.
										M. F.				M. F.									M. F.
..	..	1	3	..	..	..	..	..	..	2	..	..	2	2	..	..	..	..	..	1	..	..	1
..	..	2	1	..	..	..	..	..	3	2	..	..	4	4	..	..	..	..	..	1	..	..	1
..	1	..	..	..	..	..	1	2	..	..	2	1	1	..	..	..	..	2	..	1	1
..	..	1	..	..	..	..	..	..	..	1	..	..	1	..	1	..	..	..	..	1	..	..	..
1	1	3	4	..	..	..	..	1	3	7	6	..	3	1	2	1	..	..	..	3	..	3	1
..	3	1	2	..	..	..	..	1	..	..	1
4	..	3	7	..	..	..	..	1	..	7	8	..	9	6	3	..	4	..	15	..	..	10	9
..	..	4	1	..	1	..	..	..	..	5	1	..	..	..	..	..	..	..	3	..	..	2	1
..	..	2	3	..	..	..	..	..	..	2	3	..	1	1	..	..	..	..	..	..	..	..	..
..	..	2	2	..	..	..	..	..	1	4	1	..	5	4	1	..	2	..	1	..	..	3	..

—Continued.

DISEASES. — Continued.

ORDER 5. — Urinary Organs.										ORDER 6. — Generative Organs.		ORDER 7. — Osseous and Locomotory System.				ORDER 8. — Integumentary System.				Total for Class III.									
Nephritis.	Ischuria.	Nephria (Bright's Disease).	Diabetes.	Calculus (Gravel, etc.).	Cystitis.	Prostate, Disease of.	Kidney Diseases.	Bladder, Diseases of.	Testicles, Disease of.	M.	F.	Ovarian Dropsy.	Disease of Uterus.	Total.	Bones, Diseases of.	Joint Diseases.	Vertebrae, Diseases of.	M.	F.	Phlegmon.	Ulcer.	Skin Diseases.	M.	F.	Total.	Male.	Female.	Sex not stated.	Total.
1		2				1				3																9	3		12
							1			1																10	6		16
		1								1																3	5		7
4		1			1					3	3															14	13		27
		1								1																3	3		6
		2	1							3																29	25		54
		1										1														9	4		13
1										1			1	1												3	2		5
1										1													1	1		6	4		10
																										9	2		11

TABLE No. XV.

TOWNS IN BELKNAP COUNTY.	CLASS IV.—DEVELOPMENTAL DISEASES.																	
	ORDER 1.—Of Children.								ORDER 2. —Of Women.		ORDERS 3 and 4.				Total for Class IV.			
	Still-born.	Debility, Infantile.	Debility, Premature Birth.	Cyanosis.	Spina Bifida.	Other Malformations.	Teething.	Innutrition.	Total.	Childbirth.	Paramenia.	Total.	Old Age.	Atrophy and Debility.		Male.	Female.	Total.
														M.	F.			
Alton													2	2		2	2	4
Barnstead.	1					1		2					1	2		2	1	3
Belmont.													2	2		2	2	4
Centre Harbor													1			1		1
Gilford.			1					1					3	1	1	4	2	6
Gilmanton													4				4	4
Laconia	7				1		2	8	2	1	1	4	3	1	3	13	9	22
Meredith													1	1		1	1	2
New Hampton													1				1	1
Sanbornton							1	1				3	3		1	3	5	8
Tilton	1							1					2			1	2	3

— *Continued.*

ZYMOTIC DISEASES.

					ORDER 2.—Enthetic.					ORDER 3.— Dietic.					ORDER 4.— Parasitic.					Total for Class I.				
Tonsillitis.	Scarlatina.	Small-pox.	Varicella.	Total.	Glanders.	Gonorrhea.	Hydrophobia.	Malignant Pustule.	Septicæmia.	Syphilis.	Total.	Alcoholism.	Delirium Tremens.	Inanition.	Purpura and Scurvey.	Total.	Aphthæ.	Worms.	Other Parasites.	Total.	Male.	Female.	Sex not stated.	Total.
				M. F.							M. F.					M. F.				M. F.				
				4	3				1		1										4	3	1	7
				2	4																2	4		6
					1																	1		1
					1																	1		1
				1																	1			1
				1	3																	3		3
				1	1																1	1		2
				4	1																4	1		5
				3	2																3	2		5
				1	2				1		1										2	2		4

TABLE No. XV.

TOWNS IN CARROLL COUNTY.	CLASS II.—CONSTITUTIONAL DISEASES.																			
	ORDER 1.—Diathetic.										ORDER 2.—Tuber- cular.					Total for Class II.				
	Gout.	Dropsy.	Anæmia.	Cancer, Various.	Cancer of Breast.	Cancer of Stomach.	Cancer of Uterus.	Noma (Canker).	Mortification.	Rheumatism.	Total.		Scrofula.	Tabes Mesenterica.	Phthisis.	Hydrocephalus.	Tubercular Meningitis.	Total.		
											M.	F.						M.	F.	Male.	Female.	Total.
Albany																				
Bartlett				1							1		1	1			1	1	2	3
Brookfield																				
Chatham				2							1	1			1			1	2	3
Conway												1		6			4	3	7	
Eaton														1			1	1	1	
Effingham				1							1			3			3	1	4	
Freedom		1									1							1	1	
Hart's Location																				
Jackson				2							2			1			1	2	3	
Madison														2			1	1	2	
Moultonborough														4			3	1	4	
Ossipee				2							2			1			1	1	3	
Sandwich			2								1	1		3			1	2	5	
Tamworth				1		1					1	1		1			1	1	3	
Tuftonborough														1			1	1	1	
Wakefield														2			1	1	2	
Wolfeborough				1							1	1	5	1			2	4	7	

—Continued.

CLASS III.—LOCAL DISEASES.

ORDER 1.—Nervous System.										ORDER 2.—Circulatory System.				ORDER 3.—Respiratory System.										
Cephalitis.	Cerebritis.	Apoplexy.	Paralysis.	Insanity.	Chorea.	Epilepsy.	Tetanus.	Convulsions.	Brain Diseases.	Total.	Pericarditis.	Aneurism.	Heart Diseases.	Total.	Epistaxis.	Laryngitis.	Bronchitis, Acute.	Bronchitis, Chronic.	Pleurisy.	Pneumonia.	Asthma.	Lung Diseases.	Total.	
M.	F.												M.	F.								M.	F.	
1									1	1			1	1						2	1		2	1
2	2								1	3	4		1	1			1			5	1	1	4	3
		1	1						1	1	2		1	1						2		3	1	
																				2	1	1		
																				2				
		1						1		1	1		1		1					2		1	1	1
			1	1					2	2			3	3						3			2	1
		2	2	1					3	2			7	4	3			3		9		1	6	7
								1	3	2			5	3	2		1		3	3		1	3	
									1	1			5	2	3					3		2	1	1
		1	3					1	2	6			1		1				3	1			1	1
		3						1	2				3	3						3		1	2	
									1	4			2	2						5		5		

— *Continued.*DISEASES. — *Continued.*

ORDER 5. — Urinary Organs.										ORDER 6. — Generative Organs.		ORDER 7. — Osseous and Locomotory System.				ORDER 8. — Integumentary System.				Total for Class III.																															
Nephritis.		Ischuria.		Nephria (Bright's Disease).		Diabetes.		Calculus (Gravel, etc.).		Cystitis.		Prostate, Disease of.		Kidney Diseases.		Bladder, Diseases of.		Testicles, Disease of.		Total.		Ovarian Dropsy.		Disease of Uterus.		Total.		Bones, Diseases of.		Joint Diseases.		Vertebra, Diseases of.		Total.		Phlegmon.		Ulcer.		Skin Diseases.		Total.		Male.		Female.		Sex not stated.		Total.	
M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.						
2				1				1						1							1				1									1																	
															</																																				

TABLE No. XV.

TOWNS IN CARROLL COUNTY.	CLASS IV. — DEVELOPMENTAL DISEASES.															
	ORDER 1. — Of Children.								ORDER 2. — Of Women.		ORDERS 3 and 4.				Total for Class IV.	
	Still-born.	Debility, Infantile.	Debility, Premature Birth.	Cyanosis.	Spina Bifida.	Other Malformations.	Teething.	Imnutrition.	Total.		Childbirth.	Paramenia.	Total.	Old Age.		Atrophy and Debility.
									M.	F.				M.	F.	
Albany																
Bartlett			1					1							2	3
Brookfield														1	1	1
Chatham														2	1	3
Conway								2	2				1	2	3	8
Eaton																
Effingham													1	1		2
Freedom													1			1
Hart's Location																
Jackson														2		2
Madison													1	1		2
Moultonborough													1	1	2	3
Ossipee	1	1						1	2	1			1		3	5
Sandwich													2	5	1	8
Tamworth													2	1	1	3
Tuftonborough		1							1				1	1	1	4
Wakefield											1		1		2	2
Wolfeborough								1	1		2	2	1	3	5	8

—Continued.

CLASS V.—VIOLENT DEATHS.																					Grand Total for all Classes.								
ORDER 1.—Accident and Negligence.							OR- DER 2.	ORDER 3.—Suicide.						ORDER 4.— Various.			Total for Class V.												
Fractures and Contusions.	Wounds, Unspecified.	Burns and Scalds.	Poison.	Drowning.	Suffocation.	Various.	Total.		Homicide.	Wounds, Unspecified.	Wounds, Pistol or Gunshot.	Wounds, Knife.	Poison.	Drowning.	Hanging.	Otherwise.	Total.		Violent, not Classed.	Cause not Reported or Unclassified.	Male.	Female.	Total.	Male.	Female.	Not stated.	Total.		
							M.	F.									M.	F.										M.	F.
..	10	10	..	1	1
..	1	2	..	3	20
..	4	4	..	8	3
..	1	1	..	..	..	..	..	..	..	..	..	..	1	2	..	..	2	2	4	24	24	..	48	8
..	2	2	..	4	4
..	8	7	..	15	..
..	2	2	..	..	..	..	..	..	..	..	..	..	3	2	..	..	3	2	5	5	4	*1	10	..
..	1	..	2	3	..	..	..	..	..	..	..	..	..	..	..	1	..	..	..	2	2	4	11	4	..	15	..
1	1	..	..	..	..	..	..	..	..	1	1	..	..	..	1	1	1	7	5	..	12	..	
..	1	..	..	1	..	..	..	..	..	..	..	..	..	1	..	..	..	..	1	1	2	14	5	..	19	..	
..	1	2	..	..	2	23	21	..	44	..		
..	..	1	..	..	1	1	1	..	..	..	..	..	..	..	..	..	..	..	..	..	1	1	2	14	18	..	27	..	
2	2	2	..	..	..	..	..	..	..	..	..	..	..	..	..	..	3	3	9	6	..	15	..		
1	2	2	1	..	..	..	..	..	..	..	..	..	..	1	2	..	..	2	1	3	13	14	..	27	..
..	3	3	20	19	..	39	..		

*Classed with males.

TABLE No. XV.

TOWNS IN MERRIMACK COUNTY.	CLASS I.—																							
	ORDER 1.—Miasmatic.																							
	Carbuncle.	Cholera, Asiatic.	Cholera, Sporadic.	Cholera Infantum.	Cholera Morbus.	Croup (Pseudo-membranous).	Diphtheria.	Diarrhea.	Dysentery.	Erysipelas.	Fever, Bilious.	Fever, Cerebro-spinal.	Fever, Intermittent.	Fever, Malarial.	Fever, Typhoid.	Fever, Typho-malarial.	Fever, Unspecified.	Fever, Yellow.	Influenza (Epidemic).	Measles.	Mumps.	Metria (Puerperal Fever).	Pertussis.	
Allenstown.....				3			1	1	2															
Andover.....																								
Boscawen.....									2						1									
Bow.....									1															
Bradford.....																								
Canterbury.....				1	1														2				1	
Chichester.....				1															2					
Concord.....				25		4	3		4	3					5				3					
Danbury.....				1																				
Dunbarton.....																		2						
Epsom.....																								
Franklin.....				9						1													1	
Henniker.....																								
Hill.....				1		1	1	1																
Hooksett.....																								
Hopkinton.....																						1		
Loudon.....							1												4					
Newbury.....																			2					
New London.....							1															1		
Northfield.....				1																				
Pembroke.....				17			1	1							5				2					
Pittsfield.....								1							1									
Salisbury.....					1					1					3									
Sutton.....																			2					
Warner.....				1					1										1					
Webster.....																		1						
Wilnot.....										1					1									

— Continued.

CLASS III.—LOCAL DISEASES.

ORDER 1. — Nervous System.										ORDER 2. — Circulatory System.				ORDER 3. — Respiratory System.									
Cephalitis.	Cerebritis.	Apoplexy.	Paralysis.	Insanity.	Chorea.	Epilepsy.	Tetanus.	Convulsions.	Brain Diseases.	Total.	Pericarditis.	Aneurism.	Heart Diseases.	Total.	Epistaxis.	Laryngitis.	Bronchitis, Acute.	Bronchitis, Chronic.	Pleurisy.	Pneumonia.	Asthma.	Lung Diseases.	Total.
										M. F.				M. F.									M. F.
..	..	1	1	1	..	..	..	2	2	2	..	..	1	1	..	..	..	..	1	2	..	1	1
3	4	2	3	..	..	1	..	6	5	..	..	..	2	1	1	..	..	..	3	3	1	3	1
1	..	2	..	..	..	..	..	1	2	..	..	..	2	2	..	..	..	..	1	1	..	1	..
..	1	1	1	..	..	..	..	..	2	..	..	..	2	1	1	1	..	..	..	3	..	3	..
5	1	13	22	20	..	1	..	5	19	50	36	2	23	14	12	..	8	..	1	23	..	17	15
..	..	..	..	..	..	..	..	..	..	..	..	..	2	1	1	..	..	..	1	1	..	..	2
..	..	2	1	..	..	..	..	1	2	..	..	..	1	1	1	..	..	..	..	..	..	..	..
1	3	1	1	..	..	..	4	4	6	..	..	..	10	4	6	1	1	1	..	3	..	2	4
..	..	..	..	..	..	..	..	1	1	..	..	..	4	1	3	..	2	..	2	2	..	1	3
1	..	..	1	..	..	..	..	1	2	1	..	..	1	2	..	..	1	..	..	1	..	..	1
1	8	3	..	1	..	1	1	3	10	7	..	..	3	1	2	..	1	..	..	3	..	2	2
1	4	1	1	..	..	..	..	1	3	4	..	..	3	2	1	..	1	..	..	3	..	1	1
..	..	1	3	..	..	..	..	..	2	1	..	..	2	1	1	..	1	..	..	1	1	2	1
..	..	1	..	..	..	1	..	1	2	1	..	..	..	..	..	..	..	..	2	2	..	1	1
1	2	..	..	..	..	..	..	..	1	2	..	..	2	..	2	..	..	..	3	3	..	2	1
..	1	1	2	..	..	..	..	..	1	3	..	..	3	1	2	..	1	..	1	7	..	7	2
..	1	1	1	..	..	..	..	1	4	..	..	..	3	2	1	..	..	..	3	3	..	2	1
..	2	1	..	..	..	..	..	..	1	2	..	..	5	4	1	..	..	..	2	2	..	2	..
..	..	..	..	2	..	..	..	1	1	..	..	..	4	1	3	..	..	..	3	2	..	2	2

— Continued.

DISEASES.—Continued.

[illegible]

TABLE No. XV.

TOWNS IN MERRIMACK COUNTY.	CLASS IV. — DEVELOPMENTAL DISEASES.																		
	ORDER 1. — Of Children.								ORDER 2 — Of Women.		ORDERS 3 and 4.			Total for Class IV.					
	Still-born.	Debility, Infantile.	Debility, Premature Birth.	Cyanosis.	Spina Bifida.	Other Malformations.	Teething.	Imnutrition.	M.	F.	Childbirth.	Paramenia.	Total.	Old Age.	Atrophy and Debility.		Male.	Female.	Total.
															M.	F.			
Allenstown					1					1				1				2	2
Andover	1		1						1	1				1	1			2	3
Boscawen					1		2	2	1					1	1			3	5
Bow	1								1	1								1	1
Bradford	1	1						1	2	1				1	1			3	5
Canterbury	1								1							1	1	1	2
Chichester														1	2	1	1	3	4
Concord	20	3	7	1		6		7	26	18	1		1	3	11	1	30	33	63
Danbury																2		2	2
Dunbarton														1	2		1	2	3
Epsom															5		5		5
Franklin	3		1		1		1	3	3					1	1		4	4	8
Henniker	2	1					1	3	1					1	3		4	4	8
Hill	1								1							2	1	2	3
Hooksett	1	5						3	3					1	1		4	4	8
Hopkinton							1		1					1				2	2
Loudon	2		1						2	1				2		1	5	1	6
Newbury														1	1		1	1	2
New London																			
Northfield														1				1	1
Pembroke		1	1			1	1	2	2								2	2	4
Pittsfield	1							2	3					1	1		4	1	5
Salisbury														2	2		2	2	4
Sutton							1	1						3	1		2	3	5
Warner														3	3		3	3	6
Webster														2				2	2
Wilmot							1	1						1			1	1	2

— Continued.

CLASS V.—VIOLENT DEATHS.																					Grand Total for all Classes.							
ORDER 1.—Accident and Negligence.							OR- DER 2.		ORDER 3.—Suicide.						ORDER 4.— Various.				Total for Class V.									
Fractures and Contusions.	Wounds, Unspecified.	Burns and Scalds.	Poison.	Drowning.	Suffocation.	Various.	Total.		Homicide.	Wounds, Unspecified.	Wounds, Pistol or Gunshot.	Wounds, Knife.	Poison.	Drowning.	Hanging.	Otherwise.	Total.		Violent, not Classed.	Cause not Reported or Un- classified.	Male.	Female.	Total.	Male.	Female.	Not stated.	Total.	
							M.	F.									M.	F.										M.
.	1	1	3	1	4	1	5	13	12	...	25
.	2	2	1	..	3	..	3	13	9	...	22
1	.	.	.	1	.	3	1	..	4	..	4	30	18	...	48
1	1	1	1	.	..	1	..	1	..	1	3	1	...	4
.	1	1	.	..	1	11	9	..	..	20			
.	1	1	.	.	.	.	.	.	1	..	1	..	1	1	1	1	2	8	11	...	19		
4	.	.	.	1	.	2	5	2	1	..	1	..	1	1	1	1	2	8	9	...	17	
.	1	1	1	1	11	182	162	...	344		
.	4	5	..	9		
.	5	4	..	9		
.	.	.	.	1	.	1	2	.	.	.	.	.	.	.	.	.	.	.	1	..	1	1	8	3	...	11
.	1	..	.	.	.	.	.	.	.	.	.	.	.	..	2	..	2	21	42	...	63		
.	10	14	...	24		
.	.	.	1	.	.	2	3	.	.	.	.	.	.	.	.	.	.	.	2	3	2	..	3	7	...	10
.	1	1	.	.	.	.	.	.	.	.	.	.	.	..	2	..	5	11	14	...	25		
.	1	1	.	.	.	.	.	.	.	.	.	.	.	1	1	..	1	15	21	...	36		
.	1	.	.	.	.	.	.	1	..	1	1	1	2	15	15	...	30			
.	1	1	.	.	.	.	.	.	.	.	.	.	.	..	..	..	6	9	...	15			
.	.	.	.	2	.	1	1	.	.	.	.	.	.	.	.	.	.	.	1	..	1	1	8	7	...	15
.	.	1	.	.	2	4	..	.	.	.	.	.	.	.	.	.	.	1	..	5	..	5	27	23	...	50
.	1	..	.	.	.	.	.	.	.	.	.	.	1	1	2	1	3	21	15	...	36		
.	1	1	.	.	.	.	.	.	.	.	.	.	..	..	1	..	1	15	10	...	25		
1	1	.	.	.	.	.	.	.	.	.	.	..	2	..	3	3	17	18	...	35		
.	3	5	...	8		
.	6	8	...	14			

— Continued.

ZYMOTIC DISEASES.

				ORDER 2.—Enthetic.										ORDER 3.— Dietic.				ORDER 4.— Parasitic.				Total for Class I.						
Tonsillitis.	Scarlatina.	Small-pox.	Varicella.	Total.		Glanders.	Gonorrhea.	Hydrophobia.	Malignant Pustule.	Septicæmia.	Syphilis.	Total.		Alcoholism.	Delirium Tremens.	Inanition.	Purpura and Scurvy.	Total.		Aphthæ.	Worms.	Other Parasites.	Total.		Male.	Female.	Sex not stated.	Total.
M.	F.			M.	F.							M.	F.					M.	F.				M.	F.				
..	3	2	3	2	..	5
..	3	1	3	1	..	4	..
..	1	1	1	..
..	1	1	1	..
..	1	4	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	1	4	..	5	..	
..	3	4	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	3	4	..	7	..	
..	4	4	4	..
..	1	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	1	..	..	1	..	
..	2	3	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	2	3	..	5	..	
..	2	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	2	..	..	2	..	
..	1	3	..	..	..	..	1	..	1	..	..	..	..	..	..	..	..	..	..	2	3	..	5	..	
..	1	1	1	..
..	97	79	..	..	..	..	6	1	3	4	1	1	..	..	2	..	..	..	..	102	83	..	185	..	
..	1	2	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	1	2	..	3	..	
..	1	..	..	3	5	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	3	5	..	8	..
..	2	2	2	..
..	1	..	..	58	49	..	..	..	..	2	..	..	2	..	..	..	..	..	..	..	..	..	58	51	..	109	..
..	3	3	3	..
..	2	2	2	..
..	3	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	3	..	..	3	..	
..	1	1	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	1	1	..	2	..	
..
..	1	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	1	..	..	1	..	
..	6	3	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	6	3	..	9	..	
..	2	4	..	..	..	..	2	..	2	..	..	..	..	..	..	..	..	..	..	2	6	..	8	..	
..	1	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	1	..	..	1	..	

— Continued.

CLASS III.—LOCAL DISEASES.

ORDER 1.—Nervous System.										ORDER 2.—Circulatory System.					ORDER 3.—Respiratory System.											
Cephalitis.	Cerebritis.	Apoplexy.	Paralysis.	Insanity.	Chorea.	Epilepsy.	Tetanus.	Convulsions.	Brain Diseases.	M.	F.	Pericarditis.	Aneurism.	Heart Diseases.	M.	F.	Epistaxis.	Laryngitis.	Bronchitis, Acute.	Bronchitis, Chronic.	Pleurisy.	Pneumonia.	Asthma.	Lung Diseases.	M.	F.
												Total.							Total.							
..	..	5	1	5	1	4	3	1	1	1	1	1	1	
1	..	..	..	..	..	..	..	1	2	..	..	..	..	2	1	1	..	..	2	..	2	..	2	3
1	1	1	1	..	..	1	1	1	3	1	..	..	..	2	1	1	..	..	..	..	2	..	..	..
1	..	..	..	..	..	1	1	..	2	1	..	..	..	2	1	1	..	..	..	..	..	..	1	1
..	..	1	1	..	..	..	..	1	..	2	..	..	..	1	..	1	..	..	..	..	2	2	2	..
..	..	3	..	..	..	..	..	1	1	2	1	..	..	7	5	2	..	..	..	..	2	2	2	..
..	..	2	1	..	..	..	..	2	3	3	..	..	..	..	..	..	..	..	..	..	3	1	3	1
..	..	1	1	..	..	..	..	1	4	2	..	..	..	2	2	..	..	..	..	..	3	1	..	..
2	1	1	3	..	..	..	..	1	3	4	..	..	..	6	3	3	..	..	1	..	3	1	..	2
1	1	1	..	..	..	1	..	1	2	2	..	..	..	2	1	1	..	..	2	..	4	1	3	2
..	..	1	..	..	..	..	..	1	2	..	..	..	..	2	1	1	..	..	..	..	3	..	3	2
..	..	2	1	..	..	..	..	..	1	..	..	..	..	1	1	..	..	..	..	..	1	..	1	..
29	11	15	11	1	..	2	14	17	36	54	2	42	21	23	..	2	37	1	1	85	1	63	64	
..	..	1	..	..	..	..	..	..	1	..	..	..	..	1	..	1	..	..	..	..	..	..	..	..
..	..	1	..	..	..	..	..	..	1	..	..	..	..	2	2	..	..	..	..	..	3	..	3	..
1	3	2	..	..	..	..	..	1	3	4	..	..	..	3	2	1	..	..	1	..	6	..	3	4
..	..	2	1	..	..	..	..	1	3	1	..	..	..	3	1	2	..	..	..	..	1	..	..	1
3	11	2	1	..	..	..	7	13	12	1	..	..	1	22	11	12	..	12	2	..	40	1	128	28
..	..	1	1	..	..	..	1	1	2	1	..	..	..	2	1	1	..	1	..	..	..	..	..	..
..	..	1	1	..	..	..	..	1	1	1	..	..	..	1	1	..	..	..	..	..	3	..	1	2
1	1	..	..	..	..	..	..	1	1	1	..	..	..	3	1	2	..	..	..	..	4	..	3	1
2	5	1	..	..	1	1	1	1	6	5	..	..	..	3	1	2	..	1	1	..	7	1	5	5
..		
..	..	..	..	..	..	..	..	1	1	..	..	..	..	1	..	1	..	..	..	..	1	..	1	..
2	2	1	..	..	..	..	..	2	3	..	..	..	..	3	1	2	..	..	..	..	2	..	..	2
4	6	1	..	..	..	..	..	3	6	8	..	..	..	9	5	4	..	..	8	..	4	..	4	8
..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	1	..	1	..

TABLE No. XV.

TOWNS IN HILLSBOROUGH COUNTY.	CLASS III.—LOCAL													
	ORDER 4.—Digestive Organs.													
	Gastritis.	Enteritis.	Peritonitis.	Ascites.	Ulceration of Intestines.	Hernia.	Ileus.	Intussusception.	Stricture of Intestines.	Fistula.	Stomach Diseases.	Pancreas Diseases.	Hepatitis.	Jamdice.
	Liver Diseases.	Spleen Diseases.	Bowel Diseases.	Total.	M.	F.								
Amherst													1	1
Antrim				1							1			1
Bedford	1		2											3
Bennington														
Brookline														
Deering							1							1
Franeestown												1		1
Goffstown		1											1	2
Greenfield										1				1
Greenville														
Hancock														
Hillsborough							1							1
Hollis														
Hudson														
Litchfield														
Lyndeborough														
Manchester	6	9	4		1	2	2	1				6	11	11528
Mason					1									1
Merrimack														
Milford				1										1
Mont Vernon		1												1
Nashua	2	2	4		1	1							4	8
New Boston										2				1
New Ipswich		1											1	1
Pelham														
Peterborough	1										1			1
Sharon							1					1		2
Temple														
Weare							1				1			1
Wilton		2						1					1	3
Windsor									1				1	2

—Continued.

DISEASES. — Continued.

ORDER 5. — Urinary Organs.												ORDER 6. — Generative Organs.		ORDER 7. — Osseous and Locomotory System.		ORDER 8. — Integumentary System.				Total for Class III.									
Nephritis.	Ischuria.	Nephria (Bright's Disease).	Diabetes.	Calculus (Gravel, etc.).	Cystitis.	Prostate, Disease of.	Kidney Diseases.	Bladder, Diseases of.	Testicles, Disease of.	Total.		Ovarian Dropsy.	Disease of Uterus.	Total.	Bones, Diseases of.	Joint Diseases.	Vertebrae, Diseases of.	Total.		Phlegmon.	Ulcer.	Skin Diseases.	Total.		Male.	Female.	Sex not stated.	Total.	
										M.	F.							M.	F.				M.	F.					
			1								1														10	3		13	
		1								1															3	3		6	
																									5	9		12	
																									3	12		7	
																									2	2		5	
			1								1														3	4		7	
		1		1			1			3															14	3		17	
																									6	12		8	
		1								1															5	2		7	
		1	1							1	1														4	5		9	
																									9	10		19	
			1							1		1	1													7	6		13
																										6	3		9
		1								1																2	1		3
																									5				5
6	11	4	1				3	1		13	13		1	1		1		1							149	183		332	
																									2	1		3	
			1								1														6	1		7	
																									9	10		19	
		7	1		4		2			8	6	2		2											5	4		9	
		1		1						1	1														68	66		134	
																									5	5		10	
																									4	4		8	
																									5	4		9	
								1		1															14	13		27	
																									2			2	
		2								2															1	2		3	
							3			1	2														5	10		15	
																									19	24		43	
																									1			1	

—Continued.

CLASS V. — VIOLENT DEATHS.																											Grand Total for all Classes.					
ORDER 1. — Accident and Negligence.							ORDER 2.		ORDER 3. — Suicide.							ORDER 4. — Various.				Total for Class V.												
Fractures and Contusions.	Wounds, Unspecified.	Burns and Scalds.	Poison.	Drowning.	Suffocation.	Various.	Total.		Homicide.	M.	F.	Wounds, Unspecified.	Wounds, Pistol or Gunshot.	Wounds, Knife.	Poison.	Drowning.	Hanging.	Otherwise.	Total.		Violent, not Classified.	Cause not Reported or Unclassified.		Male.	Female.	Total.	Male.	Female.	Not stated.	Total.		
							M.	F.											M.	F.		M.	F.								M.	F.
..	1	..	..	1	1	1	..	..	..	..	..	..	..	..	..	..	..	1	..	..	1	1	2	14	8	..	..	..	22	
..	1	1	..	..	..	..	..	..	..	1	..	..	..	..	1	..	2	2	11	7	..	..	..	..	..	18	
..	2	..	1	3	11	13	..	..	..	..	..	24	
..	1	..	1	1	9	5	..	..	..	..	..	14	
..	5	4	..	..	..	..	..	9	
..	2	3	..	..	..	..	..	5	
..	5	12	..	..	..	..	..	17	
..	..	1	..	..	..	..	..	1	..	..	..	..	..	..	..	..	..	..	..	..	..	..	1	1	8	3	..	..	..	..	36
..	1	1	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	11	11	..	..	..	..	..	..	11	
..	..	1	..	..	..	..	1	..	..	..	..	..	..	..	..	..	..	..	..	1	..	2	8	6	..	..	..	..	..	..	22
..	1	2	1	2	3	17	23	40
..	13	8	..	..	..	..	..	21	
..	1	..	1	1	11	12	..	..	..	..	..	23	
..	3	3	..	..	..	..	..	..	6	
..	9	3	..	..	..	..	..	..	12	
3	..	1	1	3	..	8	13	3	..	..	..	1	..	..	..	..	..	1	2	..	1	..	66	61	82	64	146	444	470	*28	942
..	1	1	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	4	7	..	..	..	..	..	..	11	
..	1	1	1	..	..	..	..	..	..	..	..	..	..	..	..	..	2	1	3	1	11	5	..	..	..	16	
..	2	1	3	4	24	26	..	..	50	
..	6	1	6	12	1	..	..	..	..	..	..	..	..	..	..	..	11	7	23	8	31	211	191	*6	408	..	..	13	
..	1	..	..	1	..	..	..	..	..	..	..	..	..	..	..	..	..	..	1	..	1	6	9	..	..	..	..	..	15	
..	8	11	..	..	..	..	..	..	19	
..	8	6	..	..	..	..	..	..	14	
..	..	1	..	..	..	1	2	..	..	..	..	..	..	..	..	..	..	..	..	1	1	3	1	4	24	27	..	..	..	..	51
..	2	..	..	..	..	..	..	..	2	
..	1	1	..	..	..	..	..	..	..	..	..	..	..	..	1	..	..	1	..	1	4	4	..	..	..	..	..	8	
..	1	1	..	..	..	..	..	..	..	..	..	..	..	1	..	..	1	..	2	2	16	22	..	..	..	..	..	38	
..	1	1	..	..	..	..	..	..	..	..	..	..	1	..	1	..	..	2	..	2	31	43	..	..	..	..	..	74	
..	2	..	2	..	..	..	..	..	2	

* Classed with males.

TABLE No. XV.

TOWNS IN CHESHIRE COUNTY.	CLASS I. —																						
	ORDER 1. — Miasmatic.																						
	Carbuncle.	Cholera, Asiatic.	Cholera, Sporadic.	Cholera Infantum.	Cholera Morbus.	Croup (Pseudo-membranous).	Diphtheria.	Diarrhea.	Dysentery.	Erysipelas.	Fever, Bilious.	Fever, Cerebro-spinal.	Fever, Intermittent.	Fever, Malarial.	Fever, Typhoid.	Fever, Typho-malarial.	Fever, Unspecified.	Fever, Yellow.	Influenza (Epidemic).	Measles.	Mumps.	Metria (Puerperal Fever).	Pertussis.
Alstead	1	.	.	.	.
Chesterfield	1	1	.	2	.	.	.	.	.	.	.	.	.	.	.	.	.	.
Dublin
Fitzwilliam.	1	.	.	.	.
Gilsum	1	.	.	.	.	1	.	.	.	.	.	1	.	.	.	1	.	.	.	.
Harrisville	1	.	.	.	.	.	.	.	.	.	.	.	.	.	.
Hinsdale	1	.	.	2	.	.	.	.
Jaffrey	1	.	.	.	.	.	.	.	.	.	.	1	.	.	.	.	.	.	.	1
Keene	5	.	2	.	.	2	1	.	.	.	.	.	.	.	.	3	.	.	.	.
Marlborough	1	.	.	.	.	.	.	.	.	.	1	.	.	.	.	1	.	.	.	.
Marlow	1	.	.	.	1
Nelson	1	.	.	.	.
Richmond	1	1	.	.	.	.	.	.	.	.	.	.	.	3	.	.	.	.
Rindge	1	.	.	.	.	.	.	.	.	.	.	2	.	.	.	1	.	.	.	.
Roxbury
Stoddard
Sullivan	1	.	.	.	.	.	.	.	.
Surry	1	.	.	.	.
Swanzey	2	.	.	.	2	.	.	.	.
Troy	1	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.
Walpole	2	.	1	.	.	2	.	.	.	.	.	.	.	.	.	1	.	.	.	.
Westmoreland	1	1	.	.	.	.
Winchester	1	.	.	.	.	.	.	.	.	.	.	.	.	1	.	2	.	.	.	.

— Continued.

ZYMOTIC DISEASES.

[illegible]

TABLE No. XV.

TOWNS IN CHESHIRE COUNTY.	CLASS II.—CONSTITUTIONAL DISEASES.																					
	ORDER 1.—Diathetic.										ORDER 2.—Tuber- cular.					Total for Class II.						
	Gout.	Dropsy.	Anemia.	Cancer, Various.	Cancer of Breast.	Cancer of Stomach.	Cancer of Uterus.	Noma (Canker).	Mortification.	Rheumatism.	Total.		Scrofula.	Tabes Mesenterica.	Phthisis.	Hydrocephalus.	Tubercular Meningitis.	Total.				
											M.	F.						M.	F.	Male.	Female.	Total.
Alstead									1	1				2			2	3	3			
Chesterfield		1								1								1	1			
Dublin			1								1							1	1			
Fitzwilliam												1	4				1	4	5			
Gilsum			1								1		1			1	2	3	3			
Harrisville																						
Hinsdale													2			1	1	1	2			
Jaffrey													4		1	1	4	1	4			
Keene		2		4	2	1				4	5	1	2	15		7	11	11	16			
Marlborough				1					1	2			5			2	3	4	3			
Marlow			1							1				2			1	2	1			
Nelson													1				1		1			
Richmond												1	1			1	1	1	2			
Rindge													1				1		1			
Roxbury																						
Stoddard																						
Sullivan													1				1		1			
Surry																						
Swanzy				1					1	1	1		2			1	1	2	4			
Troy				1		1				1	1				2	1	1	2	4			
Walpole			1								1		2			2	2	1	3			
Westmoreland				1							1		3	1		3	1	3	5			
Winchester				1							1		3			1	2	1	4			

— Continued.

CLASS III.—LOCAL DISEASES.

ORDER 1. — Nervous System.										ORDER 2. — Circulatory System.					ORDER 3. — Respiratory System.									
Cephalitis.	Cerebritis.	Apoplexy.	Paralysis.	Insanity.	Chorea.	Epilepsy.	Tetanus.	Convulsions.	Brain Diseases.	Total.	Pericarditis.	Aneurism.	Heart Diseases.	Total.	Epistaxis.	Laryngitis.	Bronchitis, Acute.	Bronchitis, Chronic.	Pleurisy.	Pneumonia.	Asthma.	Lung Diseases.	Total.	
									M.	F.				M.	F.								M.	F.
..	..	1	1	..	..	..	..	..	1	1	..	..	2	1	1	..	..	..	..	2	1	..	1	1
..	..	..	..	..	..	..	..	..	..	..	..	..	1	1	1	..	..	..	..	1	1	..	1	2
1	..	1	1	..	..	..	..	..	1	2	..	..	2	2	..	..	1	..	..	3	..	1	3	..
..	..	..	1	..	..	..	..	1	1	1	..	..	1	..	1	..	..	..	..	3	..	1	2	..
4	2	..	1	..	..	..	1	..	6	2	..	..	4	2	2	..	1	..	..	2	..	2	1	..
..	2	1	..	..	..	..	..	..	2	1	..	..	1	1	..	1	2	..	2	2	..	4	1	..
1	1	4	4	..	..	1	..	2	6	7	..	..	7	4	3	..	1	..	..	17	..	2	13	..
..	..	..	3	..	..	..	..	..	1	2	..	..	2	1	1	..	1	1	..	3	..	2	..	..
..	..	..	..	..	..	..	..	..	..	..	..	..	1	1	..	..	..	..	..	..	..	1	2	..
..	..	..	2	..	..	..	..	1	2	1	..	..	..	..	..	..	1	..	..	1	..	..	1	..
..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	1	..	..	..	..	..	..	..
..	..	3	..	..	..	..	..	..	1	2	..	..	2	2	..	..	..	..	..	1	..	1	..	..
1	..	1	..	..	..	..	..	..	..	2	..	..	1	..	1	..	..	..	..	..	1	1	..	..
..	..	1	6	..	..	..	..	..	5	2	..	..	1	1	1	..	..	..	..	3	..	..	3	..
..	..	..	..	..	..	..	..	..	..	..	..	..	1	1	..	..	..	..	..	3	..	..	3	..
..	3	1	..	..	1	..	..	2	3	4	..	..	2	1	1	..	3	..	..	5	..	3	5	..
1	5	3	..	..	..	..	..	2	5	6	..	..	5	4	1	..	1	..	..	1	..	2	..	..
..	4	..	..	..	..	..	..	..	4	..	..	..	1	..	1	..	..	..	..	6	..	1	4	3

TABLE No. XV.

TOWNS IN CHESHIRE COUNTY.	CLASS III. — LOCAL																	
	ORDER 4. — Digestive Organs.																	
	Gastritis.	Enteritis.	Peritonitis.	Ascites.	Ulceration of Intestines.	Hernia.	Ileus.	Intussusception.	Stricture of Intestines.	Fistula.	Stomach Diseases.	Pancreas Diseases.	Hepatitis.	Jaundice.	Liver Diseases.	Spleen Diseases.	Bowel Diseases	Total.
	M.	F.																
Alstead		1																1
Chesterfield																		
Dublin																		
Fitzwilliam																		
Gilsum																		
Harrisville																		
Hinsdale																		
Jaffrey																		
Keene	1	5	2			1									3			7
Marlborough		1	1															2
Marlow			1															1
Nelson																		
Richmond	1																	1
Rindge																		
Roxbury																		
Stoddard		1																1
Sullivan																		
Surry																		
Swanzey																		
Troy			1															1
Walpole						1		1								1		3
Westmoreland			1															1
Winchester	1		1							1								2

—Continued.

DISEASES. — Continued.

ORDER 5. — Urinary Organs.											ORDER 6. — Generative Organs.		ORDER 7. — Osseous and Locomotory System.				ORDER 8. — Integumentary System.				Total for Class III.					
Nephritis.	Ischuria.	Nephria (Bright's Disease).	Diabetes.	Calculus (Gravel, etc.).	Cystitis.	Prostate, Disease of.	Kidney Diseases.	Bladder, Diseases of.	Testicles, Disease of.	Total.	Ovarian Dropsy.	Disease of Uterus.	Total.	Bones, Diseases of.	Joint Diseases.	Vertebrae, Diseases of.	Total.	Phlegmon.	Ulcer.	Skin Diseases.	Total.	Male.	Female.	Sex not stated.	Total.	
.	
.	.	1	.	.	1	.	.	.	.	1 1	.	.	.	.	.	.	.	.	.	.	.	3 3	3 3	.	5 6
.	5 6	2 4	.	11 6	
.	.	1	.	.	.	.	.	.	.	1	.	.	.	.	.	.	.	.	.	.	.	1 1	1 1	.	2 2
.	.	1	.	.	1	.	1	.	.	2 1	.	.	.	.	.	.	.	.	.	.	.	10 6	9 3	.	16 12
.	.	2	1	1	.	.	.	.	.	2 2	.	.	.	.	.	.	.	.	.	.	.	26 30	26 30	.	56 56
.	1	1	1	1	.	3 3	3 6	.	7 9
.	.	1	.	.	.	.	.	.	.	1	.	.	.	.	.	.	.	.	.	.	.	3 2	1 3	.	4 5
.	
.	5 1	2 2	.	7 3	
.	1 1	1 1	.	1 1	
.	6 2	5 3	.	11 5	
.	1	.	.	.	.	.	.	.	.	.	.	.	8 13	13 9	.	21 20	
.	.	1	.	.	.	.	.	.	.	1	.	.	.	.	.	.	.	.	.	.	.	11 10	9 5	.	20 15

TABLE No. XV.

TOWNS IN CHESHIRE COUNTY.	CLASS IV. — DEVELOPMENTAL DISEASES.																	
	ORDER 1. — Of Children.								ORDER 2. — Of Women.		ORDERS 3 and 4.			Total for Class IV.				
	Still-born.	Debility, Infantile.	Debility, Premature Birth.	Cyanosis.	Spina Bifida.	Other Malformations.	Teething.	Imnutrition.	Total.	Childbirth.	Paramenia.	Total.	Old Age.	Atrophy and Debility.		Male.	Female.	Total.
								M.	F.				M.	F.				
Alstead													2	2	1	2	3	5
Chesterfield						1			1				3				4	4
Dublin																3		3
Fitzwilliam													1				1	1
Gilsum													1	2			2	3
Harrisville																		
Hinsdale								1		1				1			1	2
Jaffrey	1							1	1	1							1	2
Keene	2	2					1		3	2			3	7	2	3	8	20
Marlborough				1					1								1	1
Marlow			1						1								1	1
Nelson																		
Richmond	1								1					1			1	2
Rindge	1								1				1		1		3	3
Roxbury													1				1	1
Stoddard														1			1	1
Sullivan													1				1	1
Surry															1		1	1
Swanzey	2								2				2				2	4
Troy								1		1							1	1
Walpole		1						1	1	1				1	2	1	3	6
Westmoreland																		
Winchester		2							2				2				2	4

— Continued.

CLASS V.—VIOLENT DEATHS.																	Grand Total for all Classes.																		
ORDER 1.—Accident and Negligence.							OR- DER 2.	ORDER 3.—Suicide.						ORDER 4.— Various.		Total for Class V.																			
Fractures and Contusions.	Wounds, Unspecified.	Burns and Scalds.	Poison.	Drowning.	Suffocation.	Various.	Total.	M.	F.	Homicide.	M.	F.	Wounds, Unspecified.	Wounds, Pistol or Gunshot.	Wounds, Knife.	Poison.	Drowning.	Hanging.	Otherwise.	Total.	M.	F.	M.	F.	Violent, not Classed.	Cause, not Reported or Unclassified.	M.	F.	Male.	Female.	Total.	Male.	Female.	Not stated.	Total.
..	1	1	1	1	1	1	3	1	1	8	7	15		
..	..	1	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	1	..	..	..	4	10	9	..	19
..	4	1	..	5			
..	1	..	..	..	6	12	..	18			
..	1	..	1	1	1	3	..	4			
1	1	..	1	2	1	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	1	2	2	2	14	11	..	25				
..	1	..	5	6	..	..	..	..	..	..	..	..	..	..	..	1	1	..	..	..	1	1	3	2	5	16	12	..	28			
..	1	..	..	1	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	1	..	1	1	2	13	7	..	20			
..	6	9	..	15			
..	2	..	2			
1	1	..	..	2	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	1	2	1	3	8	9	..	17			
..	1	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	1	..	1			
..	1	..	..	..	..	..	..	..	..	..	..	1	..	1	1	7	2	..	9			
1	1	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	1	5	..	6			
..	1	..	1	1	2	2	..	4			
..	1	1	..	..	1	..	1	1	15	9	..	24				
1	1	1	1	..	..	..	..	..	..	..	..	..	..	1	1	..	..	..	1	1	1	6	8	..	..	14				
..	2	1	3	2	5	17	22	..	39									
..	2	1	1	..	..	..	..	..	..	..	..	..	2	1	2	1	3	16	15	..	31									
..	1	..	2	1	3	15	15	..	30				

TABLE No. XV.

TOWNS IN SULLIVAN COUNTY.	CLASS I. —																						
	ORDER 1. — Miasmatic.																						
	Carbuncle.	Cholera, Asiatic.	Cholera, Sporadic.	Cholera Infantum.	Cholera Morbus.	Croup (Pseudo-membranous).	Diphtheria.	Diarrhea.	Dysentery.	Erysipelas.	Fever, Bilious.	Fever, Cerebro-spinal.	Fever, Intermittent.	Fever, Malarial.	Fever, Typhoid.	Fever, Typho-malarial.	Fever, Unspecified.	Fever, Yellow.	Influenza (Epidemic).	Measles.	Mumps.	Metria (Puerperal Fever).	Pertussis.
Aeworth	1	.	.	.	.	.	.	.	.	.	.	.	.	.
Charlestown	1	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.
Claremont	4	.	.	.	1	3	1	.	.	.	.	.	1	.	.	.	.	.	.	.	1
Cornish	1	.	.	.	.	.	.	.	.	1	.	.	.	.	.	.	.	.	1	.	.	.	.
Croydon
Goshen
Grantham	1	.	.	.	.	.	.	.	.	.	.	.	.
Langdon
Lempster
Newport	3	.	.	.	.	.	.	1	.	.	.	.	.	.	.	.	1	.	.	.	.
Plainfield	1	.	.	.	.	.	.	.	.	.	.	.	1	.	.	.	.	.	.	.	.
Springfield
Sunapee	1	.	.	.	.	.	.	.	2	.	.	.	.	.	.	.	.
Unity	1	.	1	.	.	.	.	.	1	.	.	.	.	.	.	.	.
Washington	1	.	.	.	.	.	.	.	.

— Continued.

ZYMOTIC DISEASES.

				ORDER 2. — Enthetic.								ORDER 3. — Dietic.				ORDER 4. — Parasitic.				Total for Class I.									
Tonsillitis.	Scarlatina.	Small-pox.	Varicella.	Total.		Glanders.	Gonorrhea.	Hydrophobia.	Malignant Pustule.	Septicæmia.	Syphilis.	Total.		Alcoholism.	Delirium Tremens.	Inanition.	Purpura and Scurvey.	Total.		Aphthæ.	Worms.	Other Parasites.	Total.		Male.	Female.	Sex not stated.	Total.	
.	.	.	.	1	1	1	1	.	1
.	.	.	.	7	4	.	.	.	.	1	.	1	.	.	.	.	.	.	.	.	.	.	.	.	7	4	11	4
.	3	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	1	1	.	1	
.	.	.	.	1	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	1	1	.	1
.	.	.	.	2	3	.	.	.	.	1	.	1	.	1	.	.	.	1	.	.	.	.	.	.	4	3	7	2
.	.	.	.	1	1	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	1	1	.	2
.	3	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	3	.	3	
.	.	.	.	1	2	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	1	2	.	3
.	.	.	.	1	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	1	1	.	1

TABLE No. XV.

TOWNS IN SULLIVAN COUNTY.	CLASS II.—CONSTITUTIONAL DISEASES.																						
	ORDER 1.—Diathetic.											ORDER 2.—Tuber- cular.						Total for Class II.					
	Gout.	Dropsy.	Anæmia.	Cancer, Various.	Cancer of Breast.	Cancer of Stomach.	Cancer of Uterus.	Noma (Canker).	Mortification.	Rheumatism.	Total.	Scrofula.	Tabes Mesenterica.	Phthisis.	Hydrocephalus.	Tubercular Meningitis.	Total.	Male.	Female.	Total.			
											M.						F.				M.	F.	
Acworth				1							1		1				1		2	2			
Charlestown																							
Claremont				1	1				1	1	2		1	6	1		3	5	4	7	11		
Cornish				1		1					2			3			3		3	2	5		
Croydon																							
Goshen																							
Grantham																							
Langdon														3			3	3		3			
Lempster				1						1								1		1			
Newport				3			1			1	3			3	2		4	1	5	4	9		
Plainfield														1		1	1	1		1			
Springfield				1							1			1		1	1	1	1	2			
Sunapee				1							1			1		1	1	1	1	2			
Unity			1	1							2	1					1		3	3			
Washington				1							1			1			1		2	2			

—Continued.

CLASS III.—LOCAL DISEASES.

ORDER 1. — Nervous System.										ORDER 2. — Circulatory System.					ORDER 3. — Respiratory System.									
Cephalitis.	Cerebritis.	Apoplexy.	Paralysis.	Insanity.	Chorea.	Epilepsy.	Tetanus.	Convulsions.	Brain Diseases.	Total.	Pericarditis.	Aneurism.	Heart Diseases.	Total.	Epistaxis.	Laryngitis.	Bronchitis, Acute.	Bronchitis, Chronic.	Pleurisy.	Pneumonia.	Asthma.	Lung Diseases.	Total.	
									M.	F.			M.	F.								M.	F.	
..	..	1	..	..	..	..	..	1	1	1	2	..	2	..	2	..	..	..	..	4	..	..	2	2
2	..	6	2	..	..	..	1	1	2	4	1	..	3	3	..	..	..	..	..	2	..	..	1	2
..	..	1	..	..	..	..	..	..	1	3	6	..	..	..	3	..	..	..	..	9	..	..	5	6
1	1	1	..	..	2	1	..	1	..	..	4	..	3	2	..
..	..	2	..	..	..	..	..	1	2	1	1	1	2	..	1	..	..	..	..	2	..	..	2	..
..	..	1	..	..	..	..	..	..	1	1	..	..	2	2	..	..	..	..	..	..	..	..	..	..
1	1	..	..	..	..	..	..	..	..	..	1	..	..	1	..
1	..	6	..	..	..	..	1	1	..	5	3	..	3	1	2	..	..	..	..	4	..	3	1	..
..	..	2	..	..	..	..	..	..	..	2	2	..	2	1	1	..	..	..	..	..	..	..	..	..
1	2	..	..	..	..	..	2	1	..	..	1	1	..	..	1	..	..	..	..	..	1	..
2	..	1	..	..	..	..	..	2	5	..	..	..	1	1	..	..	..	..	..	..	..	..	..	..
..	..	1	..	..	..	..	..	..	1	1	..	..	4	3	1	..	..	..	..	3	..	2	1	4
..	..	1	..	..	..	..	..	..	1	1	..	..	1	1	..	..	1	..	..	2	..	3	..	..

— Continued.

DISEASES.—Continued.

[illegible]

TABLE No. XV.

TOWNS IN SULLIVAN COUNTY.	CLASS IV.—DEVELOPMENTAL DISEASES.													
	ORDER 1.—Of Children.							ORDER 2.—Of Women.		ORDERS 3 and 4.		Total for Class IV.		
	Still-born.	Debility, Infantile.	Debility, Premature Birth.	Cyanosis.	Spina Bifida.	Other Malformations.	Teething.	Imnutrition.	Total.	Childbirth.	Paramenia.	Total.	Old Age.	Atrophy and Debility.
	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.
Acworth												2		2
Charlestown			1				1		2				3	5
Claremont	3	2						2	3	1	1	1	6	4
Cornish							1		1					8
Croydon			1						1					9
Goshen														1
Grantham														2
Langdon													1	1
Lempster												1	1	2
Newport	1				2	1		3	1			1	2	4
Plainfield														3
Springfield	1							1						1
Sunapee			1					1			1	1		2
Unity									1	1	1	1	1	3
Washington			1					1						1

TABLE No. XV.

TOWNS IN GRAFTON COUNTY.	CLASS II.—CONSTITUTIONAL DISEASES.																			
	ORDER 1.—Diathetic.										ORDER 2.—Tuber- cular.					Total for Class II.				
	Gout.	Dropsy.	Anæmia.	Cancer, Various.	Cancer of Breast.	Cancer of Stomach.	Cancer of Uterus.	Noma (Canker).	Mortification.	Rheumatism.	Total.		Scrofula.	Tabes Mesenterica.	Phthisis.	Hydrocephalus.	Tubercular Meningitis.			
											M.	F.						M.	F.	Male.	Female.	Total.
Alexandria.....															2		1	1	1	2
Ashland.....				1							1				3		2	1	2	4
Bath.....		1									1				2			2	1	3
Benton.....																				
Bethlehem.....																				
Bridgewater.....																				
Bristol.....															2		2	2		2
Campton.....															1		1	1		1
Canaan.....				1						1	2				1		1	3		3
Dorchester.....																				
Easton.....																				
Ellsworth.....															1		1	1		1
Enfield.....				1							1								1	1
Franconia.....															1		1		1	1
Grafton.....		1			1	1	1			1	2	3						2	3	5
Groton.....															1		1			1
Hanover.....					1		1				2				6	1	3	4	5	9
Haverhill.....		1			2		1			1	2	3					3	4	5	9
Hebron.....																		2	3	5
Holderness.....				1							1								1	1
Landaff.....															2		2		2	2
Lebanon.....				2		1				2	1				9		5	4	7	12
Lincoln.....																				
Lisbon.....										1	1				5		1	4	2	6
Littleton.....				1		1				1	1	2	1	5			4	2	5	9
Livermore.....																				
Lyman.....						1					1				2		2	3		3
Lyme.....															1		1	1		1
Monroe.....																				
Orange.....																				
Orford.....				1		3				2	2				2		1	1	3	6
Piermont.....															1		1		1	1
Plymouth.....					1		1					2			1		1	1	2	3
Runney.....				1							1				3		1	2	2	4
Thornton.....				1						1	1	1			2		1	1	2	4
Warren.....		1									1				1		1		2	2
Waterville.....																				
Wentworth.....				1						1					2		2	1	2	3
Woodstock.....															1		1		1	1

—Continued.

DISEASES. — Continued.

ORDER 5. — Urinary Organs.											ORDER 6. — Generative Organs.		ORDER 7. — Osseous and Locomotory System.		ORDER 8. — Integumentary System.		Total for Class III.								
Nephritis.	Ischuria.	Nephria (Bright's Disease).	Diabetes.	Calculus (Gravel, etc.).	Cystitis.	Prostate, Disease of.	Kidney Diseases.	Bladder, Diseases of.	Testicles, Disease of.	Total.	Ovarian Dropsy.	Disease of Uterus.	Total.	Bones, Diseases of.	Joint Diseases.	Vertebrae, Diseases of.	Total.	Phlegmon.	Ulcer.	Skin Diseases.	Total.	Male.	Female.	Sex not stated.	Total.
1		2								1 2													1 6	1 9	1
																							2 2	2 3	
																							2 2	2 4	1
																							6 4	2 2	
																							2 2	2 4	1
		2 1	1		1					2 1				1			1						11 4	2 2	1 1
		1 1			1					2 1													8 2	7 4	1 1
		1																					7 2	4 2	

TABLE No. XV.

TOWNS IN GRAFTON COUNTY.	CLASS IV.—DEVELOPMENTAL DISEASES.																			
	ORDER 1.—Of Children.								ORDER 2. —Of Women.		ORDERS 3 and 4.				Total for Class IV.					
	Still-born.	Debility, Infantile.	Debility, Premature Birth.	Cyanosis.	Spina Bifida.	Other Malformations.	Teething.	Imnutrition.	Total.	Childbirth.	Paramenia.	Total.	Old Age.	Atrophy and Debility.		Male.	Female.	Total.		
														M.	F.				M.	F.
Alexandria													1		1	1	2	1	3	
Ashland																				
Bath																				
Benton																				
Bethlehem														1				1	1	
Bridgewater														1		1		2	2	
Bristol														1		1	1	1	2	
Campton																				
Canaan		1							1					1	2	1		2	3	5
Dorchester																				
Easton		1							1		1		1				1	1	2	
Ellsworth																				
Enfield	3	1						2	2								2	2	4	
Franconia														2				2	2	
Grafton				1					1					1	1		1	3	4	
Groton														1			1		1	
Hanover														2	2		2	2	4	
Haverhill	1	1	1		1			1	2	3				9	4	1	12	7	19	
Hebron														1			1		1	
Holderness															2		2		2	
Landaff																				
Lebanon		1							1					1	2	1	2	3	4	7
Lincoln																				
Lisbon	1								1		1		1	2	2	1	1	4	4	8
Littleton		1	1						2						1	1	3	1	4	
Livermore																				
Lyman	1							1	1	1							1	1	2	
Lyme										1		1	1			3	1	4	5	
Monroe																				
Orange															1			1	1	
Orford	1								1					1		1	2	1	3	
Piermont																				
Plymouth	1		2						2	1				2			2	3	5	
Rumney														1	3		1	3	4	
Thornton	3								1	2				2			1	4	5	
Warren														1			1		1	
Waterville																				
Wentworth															1			1	1	
Woodstock		1							1					1			1	1	2	

TABLE No. XV.

TOWNS IN COÖS COUNTY.	CLASS I. —																							
	ORDER 1. — Miasmatic.																							
	Carbuncle.	Cholera, Asiatic.	Cholera, Sporadic.	Cholera Infantum.	Cholera Morbus.	Croup (Pseudo-membranous).	Diphtheria.	Diarrhea.	Dysentery.	Erysipelas.	Fever, Bilious.	Fever, Cerebro-spinal.	Fever, Intermittent.	Fever, Malarial.	Fever, Typhoid.	Fever, Typho-malarial.	Fever, Unspecified.	Fever, Yellow.	Influenza (Epidemic).	Measles.	Mumps.	Metria (Puerperal Fever).	Pertussis.	
Berlin			25		8	20	1	1		1					6	1			4	6	1	1		
Carroll																								
Clarksville																								
Colebrook				2				1											4					
Columbia																								
Dalton			1	1																				
Dummer																								
Errol			3																					
Gorham									1															
Jefferson			1																					
Lancaster			1	1				1	1										2					
Milan			1		1	1																		
Millsfield																								
Northumberland			1												1									
Pittsburg			1					1							1									
Randolph			1																					
Shelburne																								
Stark																			1					
Stewartstown				1				1							1				1				1	
Stratford			1			1																		
Whitefield			1		1										4								1	

— Continued.

ZYMOTIC DISEASES.

				ORDER 2. — Enthetic.				ORDER 3. — Dietic.				ORDER 4. — Parasitic.				Total for Class I.												
Tonsilitis.	Scarlatina.	Small-pox.	Varicella.	Total.		Glanders.	Gonorrhea.	Hydrophobia.	Malignant Pustule.	Septicæmia.	Syphilis.	Total.		Alcoholism.	Delirium Tremens.	Inanition.	Purpura and Scurvy.	Total.		Aphthæ.	Worms.	Other Parasites.	Total.		Male.	Female.	Sex not stated.	Total.
				M.	F.							M.	F.					M.	F.				M.	F.				
				39	36																				39	36		75
				3	4																				3	4		7
				1	1																				1	1		2
				2	1																				2	1		3
				1	1																				1	1		2
	1			3	4																				3	4		7
				1	2																				1	2		3
				1	1																				1	1		2
				2	1																				2	1		3
				1	1																				1	1		2
	2			3	4					1		1													1	1		2
				3	4																				3	4		7
				1	1																				1	1		2
				4	3																				4	3		7

TABLE No. XV.

TOWNS IN COÖS COUNTY.	CLASS II.—CONSTITUTIONAL DISEASES.																					
	ORDER 1.—Diathetic.											ORDER 2.—Tuber- cular.						Total for Class II.				
	Gout.	Dropsy.	Anæmia.	Cancer, Various.	Cancer of Breast.	Cancer of Stomach.	Cancer of Uterus.	Noma (Canker).	Mortification.	Rheumatism.	Total.		Scrofula.	Tabes Mesenterica.	Pithisis.	Hydrocephalus.	Tubercular Meningitis.	Total.		Male.	Female.	Total.
											M.	F.						M.	F.			
Berlin.....			1								1				3		1	2	2	2	4	
Carroll.....															1			1		1		
Clarksville.....																						
Colebrook.....				1								1			2		1	1	2	3		
Columbia.....			1	1							1	1			1		1	1	2	3		
Dalton.....			1									1							1	1		
Dummer.....																						
Errol.....																						
Gorham.....				1								1			1		1	1		2		
Jefferson.....															5		4	1	4	5		
Lancaster.....		1		1		1						3			6		3	3	3	6	9	
Milan.....																						
Millsfield.....																						
Northumberland.....															2		1	1	1	1	2	
Pittsburg.....		1										1								1	1	
Randolph.....																						
Shelburne.....			1									1								1	1	
Stark.....																						
Stewartstown.....															2		2		2	2	2	
Stratford.....		1										1			2	1	2	1	2	2	4	
Whitefield.....															3		1	2	1	2	3	

— Continued.

CLASS III.—LOCAL DISEASES.

ORDER 1. — Nervous System.										ORDER 2. — Circulatory System.				ORDER 3. — Respiratory System.									
Cephalitis.	Cerebritis.	Apoplexy.	Paralysis.	Insanity.	Chorea.	Epilepsy.	Tetanus.	Convulsions.	Brain Diseases.	Total.	Pericarditis.	Aneurism.	Heart Diseases.	Total.	Epistaxis.	Laryngitis.	Bronchitis, Acute.	Bronchitis, Chronic.	Pleurisy.	Pneumonia.	Asthma.	Lung Diseases.	Total.
M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.
3		3						3		5	4			3	1	2				17		13	5
			2							2										5		1	4
		1	3				1	2	1	5	3			2	1	1		1		1			1
1		1								1										2	1	1	3
																				1		1	
		1												1	1								
																				3		1	2
		1								1				3	3					3			3
			4					1		2	4			6	4	2		3		9		9	3
										1				2		1				1			1
			1					1		1	1			1									
																			1	4		2	3
														2	1	1		2					2

—Continued.

DISEASES. — Continued.

ORDER 5.—Urinary Organs.										ORDER 6.—Generative Organs.		ORDER 7.—Osseous and Locomotory System.		ORDER 8.—Integumentary System.		Total for Class III.										
Nephritis.	Ischuria.	Nephria (Bright's Disease).		Diabetes.	Calculus (Gravel, etc.).	Cystitis.	Prostate, Disease of.	Kidney Diseases.	Bladder, Diseases of.	Testicles, Disease of.	Total.	Ovarian Dropsy.	Disease of Uterus.	Total.	Bones, Diseases of.	Joint Diseases.	Vertebrae, Diseases of.	Total.	Phlegmon.	Ulcer.	Skin Diseases.	Total.	Male.	Female.	Sex not stated.	Total.
M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.
..	..	3	1	1	3	20	20	..	40
2	2	4	..	6
1	..	1	..	..	..	..	1	..	..	..	3	1	..	..	..	..	..	..	..	..	..	11	10	..	21
..	1	1	..	..	..	..	..	..	..	..	..	2	1	..	3	
..	1	1	..	2	
..	1	1	..	..	..	..	..	..	..	..	..	1	1	..	2	
..	..	1	1	..	..	..	..	1	..	..	2	1	..	..	..	..	..	..	..	..	..	3	3	..	6
1	..	3	1	..	..	..	..	..	..	..	3	2	..	..	..	..	..	..	..	..	..	7	4	..	11
..	18	13	..	31	
..	1	3	..	4	
..	1	1	1	1	..	2
..	..	1	..	..	..	..	..	..	..	..	..	..	..	..	1	..	..	..	..	..	..	5	5	..	10
..	2	3	..	5	
..
..	1	4	..	5
..	1	..	..	1	..	..	..	..	..	..	..	1	..	..	2	3	..	5	
..	3	..	..	..	..	..	3	..	..	..	..	..	..	..	..	..	..	4	3	..	7	
..	10	10	..	20	

TABLE No. XV.

TOWNS IN COÖS COUNTY.	CLASS IV.—DEVELOPMENTAL DISEASES.																			
	ORDER 1.—Of Children.								ORDER 2.—Of Women.		ORDERS 3 and 4.				Total for Class IV.					
	Still-born.	Debility, Infantile.	Debility, Premature Birth.	Cyanosis.	Spina Bifida.	Other Malformations.	Teething.	Innutation.	Total.		Childbirth.	Paramenia.	Total.	Old Age.		Atrophy and Debility.		Male.	Female.	Total.
									M.	F.				M.	F.	M.	F.			
Berlin		8	1				2	3	6	8								6	8	14
Carroll.															1				1	1
Clarksville																				
Colebrook														1	1			1	1	2
Columbia																				
Dalton															1	1		1	1	2
Dummer																				
Errol														1				1		1
Gorham																				
Jefferson																1		1		1
Lancaster	2		2			1			4	1	1		1		5		1	4	8	12
Milan														1		1	1	2	1	3
Millsfield																				
Northumberland		5							5					2	2			7	2	9
Pittsburg																				
Randolph																				
Shelburne																				
Stark															1				1	1
Stewartstown														1	4			1	4	5
Stratford																				
Whitefield	2								2		1		1	1	1			3	2	5

—Continued.

CLASS V.—VIOLENT DEATHS.																									Grand Total for all Classes.				
ORDER 1.—Accident and Negligence.							OR- DER 2.		ORDER 3.—Suicide.							ORDER 4.— Various.				Total for Class V.									
Fractures and Contusions.	Wounds, Unspecified.	Burns and Scalds.	Poison.	Drowning.	Suffocation.	Various.	Total.		Homicide.	Wounds, Unspecified.	Wounds, Pistol or Gunshot.	Wounds, Knife.	Poison.	Drowning.	Hanging.	Otherwise.	Total.		Violent, not Classed.	Cause not Reported or Unclassified.		Male.	Female.	Total.	Male.	Female.	Not stated.	Total.	
							M.	F.									M.	F.		M.	F.								M.
..	1	..	..	1	..	5	6	1	..	..	..	..	..	..	..	..	..	..	..	..	1	..	7	1	8	73	67	*1	141
..	1	..	1	2	..	..	..	..	..	..	..	..	..	..	..	..	..	1	1	2	1	3	4	7	..	11
..	1	..	1	..	..	1	1	2	2	2	4	1	..	5
..	1	..	1	..	..	..	2	1	2	1	3	5	4	..	35
..	3	4	..	..	7
..	1	..	..	1
..	1	..	..	..	..	2	3	..	..	..	..	..	..	..	..	..	..	..	..	..	..	1	3	1	4	8	5	..	13
..	2	2	..	..	..	..	..	..	..	..	..	..	..	..	..	2	4	..	4	16	5	*1	22	
..	1	..	..	3	3	1	..	..	..	..	..	..	..	..	..	..	..	..	2	5	1	6	32	32	*1	65	
..	1	..	1	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	1	1	1	5	6	..	11	
..	1	1	..	..	..	..	..	..	..	1	1	1	1	1	1	..	1	1	1	2	..	..	2	
..	1	..	..	..	..	..	1	..	..	..	..	..	..	..	1	1	1	1	1	1	1	4	1	5	18	10	..	28	
..	1	1	..	1	1	5	5	..	10
..	1	..	..	..	..	..	..	..	..	..	..	..	..	..	..	1	..	1	1	1	1	..	2
..	1	1	..	..	..	1	2	1	2	3	3	7	..	10
..	1	1	..	..	..	2	1	3	1	4	9	14	..	23
..	1	..	..	..	..	..	..	..	..	..	1	..	..	..	..	..	1	..	1	1	7	7	..	14
..	1	1	..	..	..	..	..	..	..	..	1	1	..	..	..	4	1	5	2	7	23	19	..	42

* Classed with males.

— *Continued.*

BY COUNTIES.

ZYMOTIC DISEASES.

				ORDER 2.—Enthetic.				ORDER 3.— Dietic.				ORDER 4.— Parasitic.				Total for Class I.												
Tonsillitis.	Scarlatina.	Small-pox.	Varicella.	Total.		Glanders.	Gonorrhea.	Hydrophobia.	Malignant Pustule.	Septicæmia.	Syphilis.	Total.		Alcoholism.	Delirium Tremens.	Inanition.	Purpura and Scurvey.	Total.		Apthæ.	Worms.	Other Parasites.	Total.		Male.	Female.	Sex not stated.	Total.
M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	
..	1	..	..	82	78	..	..	..	..	4	..	2	2	1	..	..	..	1	..	..	..	..	..	84	81	..	165
..	1	..	..	84	63	..	..	..	..	4	..	2	2	2	..	2	..	3	1	..	..	..	..	89	66	..	155
..	1	..	..	47	39	..	..	..	..	2	..	2	..	1	..	..	1	2	..	..	..	..	..	51	39	..	90
..	..	..	..	16	18	..	..	..	..	2	..	1	1	..	..	..	..	..	..	..	..	..	..	17	19	..	36
..	2	..	..	72	66	..	..	..	1	4	..	1	4	1	..	1	2	..	..	..	..	..	..	75	70	..	145
..	2	..	..	190	173	..	..	..	..	9	3	4	8	1	1	..	2	..	..	..	..	..	..	196	181	..	377
..	2	..	..	34	31	..	1	1	..	1	..	2	1	..	..	..	..	..	..	..	..	..	..	36	32	..	68
..	..	..	..	14	17	..	..	..	..	2	..	2	..	1	..	..	1	..	..	..	..	..	..	17	17	..	34
..	2	..	..	47	49	..	..	..	..	9	2	6	5	..	..	..	1	1	..	..	..	..	..	54	54	..	108
..	3	..	..	63	59	..	..	..	..	1	..	1	..	..	..	..	..	..	..	..	..	..	..	64	59	..	123
..	13	..	..	649	593	..	1	1	1	38	5	23	23	7	1	2	3	11	2	..	..	..	..	683	618	..	1,301

TABLE No. XV.
RECAPITULATION

COUNTIES.	CLASS II. — CONSTITUTIONAL DISEASES.																					
	ORDER 1. — Diathetic.											ORDER 2. — Tuber- cular.						Total for Class II.				
	Gout.	Dropsy.	Anæmia.	Cancer, Various.	Cancer of Breast.	Cancer of Stomach.	Cancer of Uterus.	Noma (Canker).	Mortification.	Rheumatism.	Total.		Scrofula.	Tubes Mesenterica.	Phthisis.	Hydrocephalus.	Tubercular Meningitis.	Total.		Male.	Female.	Total.
											M.	F.						M.	F.			
Rockingham....	6	3	26	2	3	2	..	1	1	15	29	3	3	85	1	..	47	45	62	74	136	
Strafford.....	6	6	14	1	1	2	1	1	1	15	18	2	..	94	2	2	48	52	63	70	133	
Belknap	2	4	9	1	..	1	..	..	..	5	12	1	..	44	2	..	23	24	28	36	64
Carroll	1	2	10	..	..	1	..	..	..	7	7	1	2	32	..	..	14	21	21	28	49
Merrimack.....	9	5	27	2	8	2	..	..	3	24	32	..	3	89	3	4	35	64	59	96	155
Hillsborough...	7	10	37	6	9	3	..	..	9	21	60	2	5	197	9	4	97	120	118	180	298
Cheshire	3	4	9	..	2	1	1	..	3	11	12	1	4	49	1	4	24	35	35	47	82	
Sullivan.....	..	1	11	1	1	1	..	..	1	3	13	1	1	20	3	..	16	9	19	22	41
Grafton.....	4	2	13	2	9	1	..	..	6	19	18	..	1	57	1	..	29	30	48	48	96
Coös.....	3	4	4	..	1	..	..	..	..	2	10	..	..	28	..	1	14	15	16	25	41
Total.....	41	41	160	15	34	14	2	2	24	122	211	11	19	695	22	15	347	415	469	626	1,095	

— *Continued.*

BY COUNTIES.

CLASS III.—LOCAL DISEASES.

ORDER 1.—Nervous System.											ORDER 2.—Circulatory System.					ORDER 3.—Respiratory System.									
Cephalitis.	Cerebritis.	Apoplexy.	Paralysis.	Insanity.	Chorea.	Epilepsy.	Tetanus.	Convulsions.	Brain Diseases.	Total.	Pericarditis.	Aneurism.	Heart Diseases.	Total.	Epistaxis.	Laryngitis.	Bronchitis, Acute.	Bronchitis, Chronic.	Pleurisy.	Pneumonia.	Asthma.	Lung Diseases.	Total.		
										M.	F.			M.	F.								M.	F.	
24	3	44	39	3	6	8	12	70	69	1	1	91	51	42	1	1	22	5	4	77	3	3	52	62	
12	5	23	16	5	10	7	45	33	1	1	59	32	28	1	10	5	1	73	1	2	55	38			
5	1	18	22	1	2	8	30	27	1	1	31	20	11	1	6	1	28	1	2	20	15				
3	2	9	12	2	4	8	23	17	2	1	30	17	13	1	6	1	42	1	2	30	21				
16	1	43	45	26	3	110	29	94	80	2	1	83	44	42	1	1	17	1	3	73	3	1	53	46	
48	1	67	29	3	4	226	34	103	111	3	126	66	63	2	67	4	2185	7	1	136	132				
8	1	23	27	1	1	2	8	38	34	1	36	24	12	2	12	1	54	2	3	31	42				
8	1	19	7	1	3	7	27	17	1	1	26	15	12	1	4	1	31	1	3	18	22				
14	2	29	30	2	1	4	1	6	14	52	51	1	56	36	21	1	8	2	3	53	1	1	37	32	
5	2	8	14	2	1	7	3	24	18	1	23	12	11	1	10	1	57	1	1	35	35				
143	18	283	241	44	119	678	130	506	457	9	2	561	317	255	1	10	162	18	14	673	19	15	467	445	

TABLE No. XV.
RECAPITULATION

COUNTIES.	CLASS III.—LOCAL																		
	ORDER 4.—Digestive Organs.																		
	Gastritis.	Enteritis.	Peritonitis.	Ascites.	Ulceration of Intestines.	Hernia.	Ileus.	Intussusception.	Stricture of Intestines.	Fistula.	Stomach Diseases.	Pancreas Diseases.	Hepatitis.	Jaundice.	Liver Diseases.	Spleen Diseases.	Bowel Diseases.	Total.	
																		M.	F.
Rockingham	7	8	5	..	..	..	2	..	..	..	8	..	3	2	8	..	2	23	25
Strafford	5	2	7	1	5	..	..	..	1	..	5	..	..	1	3	..	1	16	21
Belknap	2	2	4	..	1	1	1	2	..	..	1	..	3	1	3	1	..	12	10
Carroll	6	6	10	..	..	..	1	..	..	..	4	..	1	..	1	..	1	12	18
Merrimack	4	10	6	1	1	3	3	..	..	..	1	..	2	..	9	..	4	16	28
Hillsborough	10	16	10	2	3	3	6	..	2	..	5	..	9	2	18	..	3	41	48
Cheshire	3	8	7	..	..	1	1	..	1	..	1	..	..	..	3	..	1	13	13
Sullivan	1	3	3	1	..	..	1	..	..	..	2	..	..	..	2	..	2	6	9
Grafton	7	6	6	3	2	..	4	..	..	..	5	..	..	1	8	..	2	16	28
Coös	2	6	7	..	1	1	1	..	..	..	1	..	1	..	..	..	1	7	14
Total	47	73	68	8	13	9	20	2	4	..	33	..	19	7	55	1	17	162	214

— Continued.

BY COUNTIES.

DISEASES. — Continued.

ORDER 5. — Urinary Organs.										ORDER 6. — Generative Organs.			ORDER 7. — Osseous and Locomotory System.			ORDER 8. Integumentary System.			Total for Class III.									
Nephritis.	Ischuria.	Nephria (Bright's Disease).	Diabetes.	Calculus (Gravel, etc.).	Cystitis.	Prostate, Disease of.	Kidney Diseases.	Bladder, Diseases of.	Testicles, Disease of.	Total.		Ovarian Dropsy.	Disease of Uterus.	Total.	Bones, Diseases of.	Joint Diseases.	Vertebrae, Diseases of.	Total.		Phlegmon.	Ulcer.	Skin Diseases.	Total.		Male.	Female.	Sex not stated.	Total.
										M.	F.							M.	F.				M.	F.				
5	..	30	4	..	8	1	..	1	..	35	14	2	1	3	..	..	..	..	..	..	..	..	..	..	231	215	..	446
9	..	17	3	..	4	..	3	..	..	22	14	3	2	5	..	..	..	..	..	1	..	1	..	..	171	139	..	310
7	..	8	1	..	1	1	1	..	..	14	5	..	1	1	..	..	..	..	..	..	..	1	1	..	97	69	..	166
3	..	8	3	..	3	..	2	..	..	16	3	2	..	2	..	..	..	..	..	1	..	1	..	..	99	74	..	173
..	..	17	3	..	5	..	7	..	..	20	12	..	..	..	..	..	..	..	..	..	..	1	1	..	228	208	..	436
6	..	26	10	2	5	..	10	2	..	35	26	3	1	4	..	1	..	1	..	..	..	..	..	..	382	384	..	766
..	..	6	3	1	2	..	2	..	..	8	6	..	1	1	..	..	..	..	..	..	..	1	1	..	115	108	..	223
2	..	12	1	..	..	..	4	..	..	14	5	1	..	1	..	..	..	..	..	..	..	..	..	..	80	66	..	146
1	..	13	2	..	4	1	4	1	..	16	10	..	..	..	1	..	..	1	..	..	..	..	..	..	158	142	..	300
4	..	10	5	..	3	1	2	..	..	14	11	..	..	..	1	..	..	1	..	1	..	..	1	..	93	90	..	183
37	..	147	35	3	35	4	35	4	..	194	106	11	6	17	2	1	..	3	..	3	..	3	5	1	1,654	1,495	..	3,149

TABLE No. XV.
RECAPITULATION

COUNTIES.	CLASS IV.—DEVELOPMENTAL DISEASES.																			
	ORDER 1.—Of Children.										ORDER 2.—Of Women.			ORDERS 3 and 4.				Total for Class IV.		
	Still-born.	Debility, Infantile.	Debility, Premature Birth.	Cyanosis.	Spina Bifida.	Other Malformations.	Teething.	Innutrition.	Total.	Childbirth.	Parmanenia.	Total.	Old Age.		Atrophy and Debility.		Male.	Female.	Total.	
																				M.	F.
									M.				F.	M.	F.	M.				F.
Rockingham	18	6	5	..	1	2	1	12	34	11	1	..	1	23	42	18	23	75	77	152
Strafford	28	13	6	1	..	1	..	17	38	28	3	3	6	8	27	13	17	59	78	137
Belknap	9	..	1	..	1	1	..	3	12	3	1	..	1	14	20	3	5	29	29	58
Carroll	1	1	2	..	..	..	..	4	4	4	3	..	3	10	17	10	7	24	31	55
Merrimack	34	11	11	1	..	9	1	18	52	33	1	..	1	18	38	10	9	80	81	161
Hillsborough	96	47	37	..	..	1	8	25	137	77	7	1	8	19	36	15	17	171	138	309
Cheshire	7	5	1	1	..	1	1	4	8	12	..	..	..	9	21	9	7	26	40	66
Sullivan	5	2	2	2	..	2	1	2	8	8	2	..	2	4	7	8	10	20	27	47
Grafton	11	6	5	1	1	..	..	2	15	11	3	..	3	24	25	8	14	47	53	100
Coös	4	13	3	..	..	1	2	3	17	9	2	..	2	7	16	3	2	27	29	56
Total	213	104	73	6	3	18	14	90	325	196	23	4	27	136	249	97	111	558	583	1,141

—Continued.

BY COUNTIES.

CLASS V.—VIOLENT DEATHS.																							Grand Total for all Classes.						
ORDER 1.—Accident and Negligence.						OR- DER 2.		ORDER 3.—Suicide.						ORDER 4.— Various.				Total for Class V.											
Fractures and Contusions.	Wounds, Unspecified.	Burns and Scalds.	Poison.	Drowning.	Suffocation.	Various.	Total.		Homicide.	Wounds, Unspecified.	Wounds, Pistol or Gunshot.	Wounds, Knife.	Poison.	Drowning.	Hanging.	Otherwise.	Total.		Violent, not Classed.	Cause not Reported or Un- classified.	Male.	Female.	Total.	Male.	Female.	Not stated.	Total.		
							M.	F.									M.	F.										M.	F.
6	2	2	1	7	11	20	7	...	...	1	...	2	2	2	7	2	25	31	54	38	92	503	485	*3	991		
8	2	3	1	3	9	22	7	...	...	1	...	...	3	3	4	3	15	23	41	33	74	420	386	*3	809
1	...	...	...	4	...	5	...	...	...	...	...	...	...	1	1	...	4	4	10	4	14	211	177	*4	392
4	...	1	1	1	...	8	12	3	...	...	...	...	...	1	1	...	8	4	21	7	28	181	159	*1	341
7	...	1	1	6	15	27	3	...	...	1	...	...	1	1	3	...	10	10	41	13	54	483	468	...	951
3	...	3	2	12	1	23	37	7	...	1	...	1	1	1	4	...	84	74	126	81	207	959	964	*341	1,957				
5	...	1	...	4	9	14	5	1	2	4	6	1	...	8	9	28	15	43	240	242	...	482			
2	1	4	5	2	1	1	2	...	3	...	10	2	12	146	134	...	280			
3	1	1	3	3	...	11	17	5	...	1	1	1	3	5	...	2	7	7	29	15	44	335	312	*1	648		
2	1	...	1	3	...	15	19	3	2	4	4	2	1	18	9	42	14	56	239	217	*3	459		
41	4	12	10	44	4	105	178	42	...	1	...	5	4	1	13	20	37	6	5	2	182	171	402	222	624	3,717	3,544	49	7,310

* Classed with males.

II — 1. Diathetic diseases	44	33	17	14	56	81	23	16	37	12	333
2. Tubercular diseases	92	100	47	35	99	217	59	25	59	29	762
III — 1. Diseases of nervous system	139	78	57	40	174	214	72	44	103	42	963
2. Diseases of organs of circulation ..	93	60	31	30	86	129	36	27	57	23	572
3. Diseases of respiratory organs	114	93	35	51	99	268	73	40	69	70	912
4. Diseases of digestive organs	48	37	22	30	44	89	26	15	44	21	376
5. Diseases of urinary organs	49	36	19	19	32	61	14	19	26	25	300
6. Diseases of generative organs	3	5	1	2	.....	4	1	1	.....	.....	17
7. Diseases of osseous and locomotory organs .....	.....	.....	.....	.....	.....	1	.....	.....	1	1	3
8. Diseases of integumentary system ..	.....	1	1	1	1	.....	1	.....	.....	1	6
IV — 1. Developmental diseases of children..	45	66	15	8	85	214	20	16	26	26	521
2. Developmental diseases of women...	1	6	1	3	1	8	.....	2	3	2	27
3. Old age	65	35	34	27	56	55	30	11	49	23	385
4. Atrophy and debility	41	30	8	17	19	32	16	18	22	5	208
V — 1. Accident and negligence	29	29	5	15	31	45	19	7	24	23	227
2. Homicide .....	.....	.....	.....	.....	.....	.....	.....	.....	1	.....	1
3. Suicide	7	7	1	1	3	4	7	2	5	6	43

Derry	Males	6	1	2	2	1	1	1	2	3	1	2	1	2	1	3	2	4	1	2	2	20
	Females	2	1	1	1	3	1	1	6	5	1	1	2	2	1	2	5	2	2	1	5	22
East Kingston	Males	2	1	1	1	1	1	1	3	1	1	1	1	1	1	2	1	1	1	1	8	
	Females	1	1	1	1	1	1	1	2	1	1	1	1	1	1	1	1	1	2	1	5	
Epping	Males	5	4	3	1	1	2	1	7	3	3	2	1	2	1	2	4	4	1	6	27	
	Females	3	1	1	2	2	1	2	4	1	1	1	3	6	2	3	1	1	2	1	48	
Exeter	Males	2	1	1	5	3	2	1	2	9	3	1	1	4	3	2	3	1	2	7	28	
	Females	4	3	1	1	2	3	7	8	1	3	2	2	3	3	2	4	5	2	3	32	
Fremont	Males	3	1	1	1	1	1	1	1	1	1	2	1	1	1	1	1	1	1	1	4	
	Females	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	7	
Greenland	Males	1	1	2	1	2	2	1	2	1	3	1	1	1	1	1	1	1	1	1	6	
	Females	1	1	1	1	2	1	1	2	1	3	1	3	1	3	1	3	1	1	1	7	
Hampstead	Males	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	6	
	Females	1	1	1	1	1	1	1	3	2	1	1	2	1	1	1	1	1	2	1	8	
Hampton	Males	2	1	1	1	1	1	2	4	1	2	3	2	1	2	1	1	2	1	1	14	
	Females	1	3	3	1	2	3	2	3	1	4	4	1	1	1	1	1	2	1	2	18	
Hampton Falls	Males	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	6	
	Females	1	1	1	1	1	1	1	3	1	1	1	1	1	1	1	1	2	1	1	6	
Kensington	Males	1	1	1	1	1	1	2	1	2	1	2	1	1	1	1	1	1	1	1	4	
	Females	1	1	1	1	1	1	2	2	1	2	1	1	2	1	1	2	1	1	1	6	

* Not including premature births or still-births.

TABLE No. XVII. — *Continued.*

TOWNS IN ROCKINGHAM COUNTY. — <i>Continued.</i>		Under 1.	1 to 5.	5 to 10.	10 to 20.	20 to 30.	30 to 40.	40 to 50.	50 to 60.	60 to 70.	70 to 80.	80 to 90.	90 to 100.	Unknown.	January.	February.	March.	April.	May.	June.	July.	August.	September.	October.	November.	December.	Unknown.	Total.	Grand total.
Kingston	Males	...	1	1	...	1	1	1	1	2	1	2	...	1	...	...	1	...	1	1	1	1	2	1	1	3	...	10	...
	Females	...	1	...	...	...	...	...	...	1	...	1	...	...	...	...	...	...	...	...	...	...	...	1	1	1	...	3	13
Londonderry	Males	1	1	...	...	...	...	1	4	6	2	1	...	...	2	1	2	1	1	1	2	1	2	1	2	3	...	16	...
	Females	1	1	2	1	2	1	1	1	2	3	1	1	1	...	...	2	2	1	1	1	2	4	1	1	1	...	13	29
Newcastle	Males	...	...	...	...	...	...	...	...	...	...	1	...	...	...	...	...	...	...	...	...	...	...	1	...	...	...	1	...
	Females	...	...	1	...	1	...	1	...	1	...	1	...	...	...	...	...	...	...	...	...	1	1	...	1	...	...	3	4
Newington	Males	...	...	...	...	1	1	1	...	1	...	...	...	...	...	1	...	...	1	...	...	...	...	...	...	...	...	3	...
	Females	1	1	...	...	2	2	2	2	2	1	...	...	...	...	...	1	1	1	3	1	1	2	...	1	...	...	9	12
Newmarket	Males	6	8	2	...	1	2	3	3	4	...	...	...	...	1	3	2	1	3	4	4	1	1	1	2	8	...	29	...
	Females	9	7	2	2	2	1	3	2	2	4	1	...	...	3	1	3	5	1	2	6	2	5	2	1	...	...	36	65
Newton	Males	1	...	...	...	...	...	1	2	1	2	2	...	...	...	...	1	3	1	...	...	1	...	2	1	...	...	9	...
	Females	...	...	...	...	1	1	1	3	5	1	...	...	...	1	1	...	...	1	2	3	...	...	2	1	1	...	12	21
North Hampton	Males	2	1	...	...	1	...	...	2	2	1	...	...	...	1	1	1	1	...	1	1	1	1	...	1	...	...	9	...
	Females	...	...	...	...	...	...	2	1	...	...	1	...	...	...	...	1	1	1	1	...	...	...	...	1	...	...	4	13

Northwood.....	Males.....	1	1	1	1	1	1	1	1	2	1	2	1	4	1	1	2	1	4	1	1	3	1	1	15	...	
	Females.....	2	...	3	1	1	...	1	3	3	1	1	...	1	1	2	1	3	1	3	1	1	1	1	15	30	
Nottingham.....	Males.....	1	...	1	...	1	...	1	...	1	1	...	1	...	2	...	...	...	...	...	...	2	...	1	4	...
	Females.....	1	...	1	...	3	1	...	3	1	...	1	...	1	1	1	...	1	1	...	...	1	1	1	5	9
Plaistow.....	Males.....	1	1	...	1	...	2	1	1	...	...	...	2	...	2	...	2	1	...	1	1	2	1	1	7	...
	Females.....	2	2	...	1	2	4	1	...	...	...	...	2	1	...	1	1	2	...	1	2	1	4	...	12	19
Portsmouth.....	Males.....	*20	3	4	5	11	10	7	9	14	13	6	...	4	8	8	6	5	10	9	15	11	6	10	106	...	
	Females.....	12	4	3	...	4	9	4	8	13	14	16	3	1	3	12	6	12	9	6	4	5	8	6	7	6	13
Raymond.....	Males.....	2	...	2	...	1	2	1	1	...	...	...	1	1	3	...	...	...	...	...	...	1	3	9	...	
	Females.....	1	3	1	...	1	1	1	1	...	...	...	1	2	1	1	...	1	2	...	1	2	...	8	17	
Rye.....	Males.....	1	...	1	...	1	2	1	4	...	...	...	3	1	...	...	1	2	...	3	...	10	...	5	15	
	Females.....	...	...	1	2	...	1	1	...	...	...	1	...	1	2	...	...	1	...	1	...	1	...	...	...
Salem.....	Males.....	2	1	2	...	1	4	6	1	...	...	1	3	1	1	1	...	2	1	2	1	1	4	18	...	
	Females.....	...	1	3	1	1	2	3	3	4	...	2	1	...	3	1	2	2	3	2	...	2	...	18	36		
Sandown.....	Males.....	1	...	...	...	...	...	...	1	...	...	...	...	...	...	...	...	...	...	...	1	1	2	...		
	Females.....	1	1	1	...	1	...	...	...	...	...	...	1	1	...	...	1	...	...	1	...	...	3	5		
Seabrook.....	Males.....	4	8	2	2	1	...	2	3	2	...	...	1	3	2	5	...	3	1	2	2	1	3	25	...	
	Females.....	2	1	2	1	1	1	2	2	1	...	1	2	3	1	2	1	...	2	1	1	3	2	...	15	40	
South Hampton.....	Males.....	1	...	...	...	1	4	2	...	...	...	...	2	3	1	...	...	...	...	1	...	1	8	...		
	Females.....	...	...	...	...	1	1	...	1	...	...	...	...	1	...	...	...	...	...	...	1	...	2	10		

* One, sex not stated.

TABLE No. XVII. — *Continued.*

TOWNS IN ROCKINGHAM COUNTY. — <i>Continued.</i>	Grand total.																											
	Under 1.	1 to 5.	5 to 10.	10 to 20.	20 to 30.	30 to 40.	40 to 50.	50 to 60.	60 to 70.	70 to 80.	80 to 90.	90 to 100.	Unknown.	January.	February.	March.	April.	May.	June.	July.	August.	September.	October.	November.	December.	Unknown.	Total.	
South Newmarket. Males	1	1	..	1	2	1	..	1	2	1	..	..	..	1	..	2	2	1	1	1	1	1	1	..	..	..	10	...
Females	3	1	..	1	..	..	..	..	..	1	..	1	..	1	..	..	2	1	..	2	1	..	..	..	..	..	7	17
Stratham	2	..	..	1	..	1	1	1	1	2	..	..	..	1	..	1	1	2	2	1	1	1	..	..	..	..	8	...
Females	1	..	..	..	..	..	..	..	..	1	..	1	..	1	..	..	..	1	1	..	..	1	..	..	..	..	3	11
Windham	1	1	2	2	..	1	2	2	1	..	1	..	..	..	..	1	4	1	1	1	..	2	2	1	..	..	12	...
Females	1	..	1	..	..	1	1	2	1	..	..	..	..	..	..	2	..	..	..	..	1	..	1	5	..	..	9	21

TOWNS IN STRAFFORD COUNTY.		Under 1.	1 to 5.	5 to 10.	10 to 20.	20 to 30.	30 to 40.	40 to 50.	50 to 60.	60 to 70.	70 to 80.	80 to 90.	90 to 100.	Over 100.	Unknown.	January.	February.	March.	April.	May.	June.	July.	August.	September.	October.	November.	December.	Unknown.	Total.	Grand total.
Barrington	Males	1	1	1	1	1	1	1	1	1	1	3	...	...	...	...	...	...	1	1	1	1	1	1	1	4	9	...	8 17
	Females	...	1	1	1	1	1	1	2	2	1	1	...	...	...	3	...	...	...	...	...	...	...	1	2	2	...	...
Dover	Males	35	6	8	13	13	12	15	12	18	7	1	...	...	...	11	10	12	16	7	11	16	12	10	16	13	...	146	...
	Females	27	12	1	9	14	10	16	10	13	21	13	3	22	13	16	9	11	13	16	8	9	10	10	12	...	149	295
Durham	Males	2	1	1	1	1	1	1	2	1	1	2	...	...	...	1	1	...	3	...	...	...	1	...	4	...	10	...	9 19
	Females	...	1	1	4	1	1	1	2	2	1	1	...	...	...	1	1	1	1	1	1	3	1	...	2	...	9	...	
Farnington	Males	5	1	1	2	1	3	2	7	1	3	1	2	2	2	3	2	3	1	2	1	2	4	4	...	27	...
	Females	2	...	1	1	3	4	1	3	3	2	...	...	...	...	2	2	2	2	3	1	1	2	...	2	3	...	20	47
Lee	Males	...	1	1	1	1	1	1	...	2	2	...	...	...	...	...	1	1	1	1	1	1	1	1	1	1	...	7	...
	Females	...	1	1	1	1	1	1	1	1	1	...	...	...	...	1	...	1	2	...	...	...	...	...	...	...	4	11	...
Madbury	Males	1	...	1	2	1	1	1	1	...	...	1	...	...	...	1	...	1	1	3	...	...	...	...	...	...	6	...	1 7
	Females	...	...	...	...	1	1	1	1	...	...	...	...	...	...	...	...	1	1	...	...	...	...	...	...	...	1	...	
Middleton	Males	...	...	...	2	1	1	1	1	...	3	...	...	...	...	2	...	1	1	1	1	1	1	1	1	...	6	...	4 10
	Females	...	...	...	2	1	1	1	1	...	1	...	...	...	...	1	...	1	2	...	...	...	...	...	...	...	4	...	
Milton	Males	1	1	2	2	3	1	2	4	1	...	...	...	...	...	1	...	2	1	1	3	2	1	...	3	...	17	...	12 29
	Females	3	2	2	...	1	1	1	1	1	1	1	1	3	...	3	1	1	3	...	12		...

TABLE No. XVII. — *Continued.*

TOWNS IN STRAFFORD COUNTY. — <i>Continued.</i>		Under 1.	1 to 5.	5 to 10.	10 to 20.	20 to 30.	30 to 40.	40 to 50.	50 to 60.	60 to 70.	70 to 80.	80 to 90.	90 to 100.	Over 100.	Unknown.	January.	February.	March.	April.	May.	June.	July.	August.	September.	October.	November.	December.	Unknown.	Total.	Grand total.
New Durham	Males	2	...	...	1	1	1	1	...	1	2	2	...	...	2	2	...	...	...	2	1	...	2	...	1	1	...	1	9	...
	Females	...	...	...	...	1	...	...	...	1	1	...	...	...	...	...	1	...	...	...	...	...	...	...	...	...	1	...	3	12
Rochester	Males	12	8	3	6	4	9	3	6	10	6	2	...	...	1	5	3	10	5	5	2	2	11	7	7	3	10	...	70	...
	Females	11	7	3	9	6	3	4	4	6	9	7	...	...	3	6	16	4	9	10	3	...	5	7	5	3	4	...	72	142
Rollinsford	Males	3	1	2	...	1	1	...	2	5	1	...	...	...	...	...	...	1	1	3	1	4	...	3	1	1	...	16	...	
	Females	2	...	1	2	...	2	...	1	...	3	1	1	...	...	3	...	...	2	1	2	...	2	1	2	...	...	13	29	
Somersworth	Males	17	13	3	7	3	2	4	2	4	5	2	1	...	1	3	4	5	8	5	7	10	9	2	3	4	4	...	64	...
	Females	20	8	4	3	6	2	3	3	4	7	8	2	...	1	3	9	10	7	2	5	8	6	6	7	2	6	...	71	135
Strafford	Males	5	1	...	1	...	...	...	1	1	3	...	...	...	1	2	...	2	1	1	2	...	...	1	1	1	...	2	13	...
	Females	...	2	...	1	...	...	...	1	1	2	1	1	...	...	3	1	...	...	...	2	...	2	...	...	1	...	9	22	

TOWNS IN BELKNAP COUNTY.		Under 1.	1 to 5.	5 to 10.	10 to 20.	20 to 30.	30 to 40.	40 to 50.	50 to 60.	60 to 70.	70 to 80.	80 to 90.	90 to 100.	Over 100.	Unknown.	January.	February.	March.	April.	May.	June.	July.	August.	September.	October.	November.	December.	Unknown.	Total.	Grand total.
Alton....	Males.....	2	1	2	2	2	2	2	4	3	3	3	3	3	2	2	3	1	1	2	2	2	1	3	3	1	2	2	17	17
	Females.....	1	1	1	1	1	1	1	1	3	3	3	3	3	1	1	1	1	1	1	1	1	1	1	1	1	3	9	26	
Barnstead....	Males.....	1	1	1	2	2	1	2	2	1	3	3	3	3	2	2	2	1	3	2	1	2	1	1	2	2	2	2	15	15
	Females.....	1	1	2	1	1	1	1	1	3	4	4	4	4	1	1	1	1	2	1	2	1	1	1	2	2	2	2	13	28
Belmont....	Males.....	2	1	2	1	1	1	1	3	4	4	4	4	4	1	1	2	1	2	1	1	1	1	1	2	1	1	1	9	9
	Females.....	1	1	2	1	1	1	1	1	3	2	2	2	2	1	1	2	1	2	1	2	1	1	1	3	3	3	3	10	19
Centre Harbor....	Males.....	1	1	1	1	1	1	1	1	1	2	2	2	2	1	1	1	1	1	1	1	1	1	1	1	1	1	1	4	4
	Females.....	1	1	1	1	1	1	1	1	2	2	2	2	2	1	1	1	1	1	1	1	1	1	1	1	1	1	1	3	7
Gilford....	Males.....	6	1	1	3	1	1	3	3	4	8	2	2	2	1	1	1	2	3	4	4	2	2	2	3	2	5	3	31	31
	Females.....	6	1	2	2	1	1	3	3	1	3	2	2	2	2	1	1	2	1	2	1	3	5	3	4	2	2	2	27	58
Gilmanton....	Males.....	1	1	1	2	2	2	2	2	2	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	5	5
	Females.....	1	1	1	1	1	1	1	1	1	2	2	2	2	1	1	1	2	2	2	2	2	1	2	1	2	2	2	10	15
Laconia....	Males.....	*27	15	7	2	3	2	5	3	4	7	3	3	3	2	3	3	4	4	1	1	10	5	13	6	10	5	9	83	83
	Females.....	22	7	3	5	6	8	1	6	4	7	3	3	3	1	5	4	4	4	9	8	7	6	9	3	5	9	9	73	156
Meredith....	Males.....	1	1	1	2	2	2	2	2	2	6	2	2	2	2	2	2	1	1	1	4	1	2	1	1	2	2	2	15	15
	Females.....	1	1	1	2	2	3	3	3	3	2	2	2	2	1	1	1	1	1	1	1	1	1	1	1	1	1	1	8	23

* Two, sex not stated. † One, sex not stated.

TABLE No. XVII. — *Continued.*

TOWNS IN BELKNAP COUNTY. — <i>Continued.</i>	Under 1.																	Grand total.									
	1 to 5.	5 to 10.	10 to 20.	20 to 30.	30 to 40.	40 to 50.	50 to 60.	60 to 70.	70 to 80.	80 to 90.	90 to 100.	Over 100.	Unknown.	January.	February.	March.	April.		May.	June.	July.	August.	September.	October.	November.	December.	Unknown.	Total.
New Hampton...	...	...	3..	1..	1..	...	...	...	2..	...	...	1..	...	1..	...	...	1..	1..	1..	1..	1..	1..	...	1..	1..	...	7..
Males.....	...	...	1..	...	...	...	...	1..	1..	...	...	...	...	...	...	...	...	...	...	2..	...	...	...	1..	...	...	4..
Females.....	1..	1..	1..	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	11..
Sanbornton.....	...	...	...	...	1..	1..	1..	2..	1..	3..	1..	...	...	...	2..	...	4..	1..	1..	1..	1..	1..	1..	...	1..	...	9..
Males.....	...	...	...	...	1..	1..	1..	...	6..	1..	1..	...	...	...	...	...	1..	1..	2..	1..	1..	1..	3..	...	2..	...	11..
Females.....	1..	...	1..	1..	1..	...	...	...	...	...	...	...	...	...	...	...	1..	1..	1..	1..	1..	1..	1..	...	...	...	20..
Tilton	1..	...	1..	1..	2..	1..	3..	2..	2..	2..	...	...	...	1..	1..	4..	1..	1..	1..	1..	2..	...	...	...	...	12..	
Males.....	...	...	...	...	3..	...	...	...	...	...	...	...	...	...	...	...	1..	1..	1..	1..	2..	...	...	...	...	...	19..
Females.....	1..	...	...	...	...	...	4..	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	7..

TOWNS IN CARROLL COUNTY.		Under 1.	1 to 5.	5 to 10.	10 to 20.	20 to 30.	30 to 40.	40 to 50.	50 to 60.	60 to 70.	70 to 80.	80 to 90.	90 to 100.	Over 100.	Unknown.	January.	February.	March.	April.	May.	June.	July.	August.	September.	October.	November.	December.	Unknown.	Total.	Grand total.
Albany	Males																												1	1
	Females				1															1										
Bartlett	Males	3	2					2		1	1	1						1	1	1	1			3	1	1	1	1	9	...
	Females	3			2	1	2											3				1	1	2	1	2	1	1	10	19
Brookfield	Males																												1	...
	Females	1								1													1		1		1		2	3
Chatham	Males	1										2	1				2	1								1			4	...
	Females						1					2	1								1	1		1	1				4	8
Conway	Males	2		1	1	1	3	4	6	2	1				2		1	1	1	2	1	2		3	1	4	8		24	...
	Females	5	1	1	1	3	2	1	3	1	4	1					1	2	2	2				1	2	5	7		24	48
Eaton	Males								1	1													1		1				2	...
	Females	1					1																						2	4
Effingham	Males																												8	...
	Females				2			1	2	1	3						1	1	2	1	2	1	1		1	1			7	15
Freedom	Males	*1			2			1	1	1		1				1	*2	1									1		6	...
	Females			1							2						1	1	1								1		4	10

* Sex not stated, classed with males.

TABLE No. XVII. — *Continued.*

TOWNS IN CARROLL COUNTY. — <i>Continued.</i>		Under 1.	1 to 5.	5 to 10.	10 to 20.	20 to 30.	30 to 40.	40 to 50.	50 to 60.	60 to 70.	70 to 80.	80 to 90.	90 to 100.	Over 100.	Unknown.	January.	February.	March.	April.	May.	June.	July.	August.	September.	October.	November.	December.	Unknown.	Total.	Grand total.	
Hart's Location.....	Males					2										2													2	2	
	Females																														
Jackson	Males	1		1		1	1	1	1	4	1						1	2					2	1	4	1		11	11	4	15
	Females	1				1	1	1		1						1					2		1						4		
Madison	Males	1							1	2	2	1						1		2	1		1	1	1			7	7	5	12
	Females	1						2		2						2			1	1		1						5			
Moultonborough....	Males	1						2	2	1	6	2				1	2	2	2	1		2		1	2	1		14	14	5	19
	Females						1			2	2							1					1	1	1	1		5			
Ossipee	Males	1				3			1	5	5	4	1		2	2	1	4		3			2	2	4	2		22	22	20	42
	Females	1	1			1	1	1	2	2	6	4	1		1	2	1	6	1	2	2	2	2			2		20			
Sandwich	Males	2	1				2		1	1	5	1			1	3	3		2	2					2		14	14	18	32	
	Females	1		1		1	1		2	2	3	6	1			2	2	2	2	4	1		1	1	3	1		18			
Tamworth	Males	1	1						1	3	2	5	1			1		3		3	3		2	1		1		14	14	13	27
	Females	1							4	1	4	2	1			1	3				1		1	1	4	2		13			

Concord	Males	35	9	3	3	11	8	17	15	27	24	12	12	10	11	8	23	14	15	24	1	164	...					
	Females	23	3	3	6	5	18	10	19	14	26	21	1	4	8	18	10	9	17	9	20	17	12	10	7	16	153	317
Danbury	Males	1	1	...	1	...	1	...	1	1	1	...	1	...	1	...	4	...					
	Females	1	3	1	1	1	...	2	1	...	1	5	9		
Dunbarton	Males	1	1	2	1	1	1	...	1	...	2	5	...					
	Females	1	3	1	1	1	2	4	9	...					
Epsom	Males	1	1	...	3	1	...	2	...	...	...	...	...	...	3	1	2	...	2	...	8	...
	Females	...	...	...	2	1	...	...	...	...	...	...	...	...	...	...	2	1	...	...	3	11
Franklin	Males	7	1	1	1	2	1	1	2	1	1	...	2	2	2	1	2	2	1	4	...	19	...					
	Females	10	4	3	3	5	1	4	5	4	...	1	3	2	2	4	2	3	2	1	2	4	3	...	40	59		
Henniker	Males	2	...	1	1	...	2	1	1	...	2	1	2	...	1	...	1	...	1	...	8	...						
	Females	...	1	...	1	...	1	4	1	3	...	1	...	2	4	1	2	...	1	1	14	22						
Hill	Males	...	...	...	1	...	...	...	...	...	...	...	...	...	1	...	...	...	...	1	...	
	Females	...	...	...	1	...	2	1	...	...	...	...	1	1	...	1	...	...	...	1	4	5
Hooksett	Males	3	1	...	1	1	4	1	...	...	...	...	...	...	2	1	3	1	1	1	11	...
	Females	3	3	1	1	1	1	2	3	1	...	1	1	3	...	1	1	3	2	2	17	28						
Hopkinton	Males	1	...	1	1	...	4	3	1	...	2	2	2	...	3	1	...	1	1	1	15	...						
	Females	2	1	...	2	1	4	3	4	3	1	...	2	4	3	2	1	1	3	2	21	36						
Loudon	Males	1	1	2	2	4	1	...	1	...	1	1	3	1	1	...	1	1	2	13	...					
	Females	2	2	...	2	...	1	3	4	...	1	3	4	...	1	3	1	...	2	2	14	27						

TABLE No. XVII. — *Continued.*

TOWNS IN MERRIMACK COUNTY. — <i>Continued.</i>		Under 1.	1 to 5.	5 to 10.	10 to 20.	20 to 30.	30 to 40.	40 to 50.	50 to 60.	60 to 70.	70 to 80.	80 to 90.	90 to 100.	Unknown.	January.	February.	March.	April.	May.	June.	July.	August.	September.	October.	November.	December.	Unknown.	Total.	Grand total.
Newbury.....	Males	1	1	1	1	1	2	2	2	2	2	1	1	1	1	1	2	2	1	1	3	1	2	1	2	1	2	6	9
	Females	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	2	2	1	1	3	1	2	1	2	1	2	9	15
New London	Males	1	1	1	1	1	1	1	1	1	1	1	1	1	2	1	1	1	1	1	1	1	1	1	1	1	1	6	8
	Females	1	1	1	1	1	2	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	2	1	2	8	14
Northfield	Males	1	1	1	1	1	1	1	1	1	2	1	1	1	1	2	1	2	1	1	1	1	1	1	2	1	2	8	15
	Females	1	1	1	1	1	1	1	1	2	2	1	1	1	1	1	1	1	1	1	1	1	3	1	1	1	7	15	
Pembroke.....	Males	13	4	1	3	4	1	1	1	1	1	1	1	1	1	1	1	1	1	1	2	4	10	3	1	3	27	27	49
	Females	8	2	2	3	2	3	3	3	3	1	1	1	1	1	2	1	1	3	2	2	6	2	4	1	1	1	22	49
Pittsfield.....	Males	3	1	1	2	2	2	1	1	4	3	3	1	1	2	2	1	2	3	3	1	1	2	1	3	1	20	20	35
	Females	1	1	1	1	1	1	1	1	2	1	3	1	1	1	2	1	2	1	1	1	1	1	4	3	15	15	35	
Salisbury	Males	1	1	1	1	1	3	1	2	3	3	1	1	1	1	1	2	1	1	2	2	3	1	1	1	1	14	14	23
	Females	1	1	1	1	1	1	2	1	4	1	1	1	1	1	1	1	2	2	2	2	2	2	1	1	1	9	23	23
Sutton	Males	3	1	1	1	1	1	1	1	2	3	2	1	1	2	4	1	1	1	1	1	1	2	1	2	2	15	15	25
	Females	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	3	2	1	1	1	1	10	25	25

TABLE No. XVII. — *Continued.*

TOWNS IN HILLSBOROUGH COUNTY. — <i>Continued.</i>		Under 1.	1 to 5.	5 to 10.	10 to 20.	20 to 30.	30 to 40.	40 to 50.	50 to 60.	60 to 70.	70 to 80.	80 to 90.	90 to 100.	Over 100.	Unknown.	January.	February.	March.	April.	May.	June.	July.	August.	September.	October.	November.	December.	Unknown.	Total.	Grand total.
Mason	Males	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	2	1	1	1	1	1	1	4	...
	Females							1	1	1	2	1	1	1	1	1	1	1	1	3	1	1	1	1	1	7	11
Merrimack	Males	1	1	1	1	2	1	1	1	3	2	1	1	1	1	4	1	1	1	1	1	1	1	1	1	1	2	1	11	...
	Females						2	2	2	2	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	5	16
Milford	Males	3	2	3	2	3	3	2	2	5	3	1	1	2	2	2	3	1	1	1	1	4	1	1	1	2	4	20	...	
	Females	3	1	1	1	3	3	2	2	4	5	1	1	1	1	2	4	2	5	2	5	2	3	2	2	1	1	25	45	
Mont Vernon	Males					1	1	1	1	1	2	1	1	1	1	1	1	1	1	1	1	2	1	1	1	1	1	6	...	
	Females					1	1	1	1	3	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	4	1	7	13	
Nashua	Males	70	15	11	12	14	13	13	9	13	10	4	...	...	13	12	13	13	15	16	16	17	27	13	9	13	19	4187	...
	Females	50	20	41	18	13	12	10	12	11	13	1	1	4	6	7	11	13	18	24	12	17	15	23	10	22	1179	366		
New Boston	Males	2	1	1	1	1	1	1	1	3	...	...	...	...	1	1	1	1	1	1	1	2	2	2	1	1	1	6	...
	Females	1	1	1	1	1	1	1	1	2	1	1	1	1	1	1	1	1	1	1	1	1	3	3	4	1	1	9	15	
New Ipswich	Males	3	...	...	...	...	...	...	...	3	1	...	...	...	3	1	1	1	1	1	1	4	...	...	...	...	...	7	...
	Females	1	1	1	1	1	1	1	1	3	3	1	1	1	2	1	1	1	1	1	2	...	2	1	...	...	...	9	16

[illegible]

TABLE No. XVII. — *Continued.*

TOWNS IN CHESHIRE COUNTY.		Under 1.	1 to 5.	5 to 10.	10 to 20.	20 to 30.	30 to 40.	40 to 50.	50 to 60.	60 to 70.	70 to 80.	80 to 90.	90 to 100.	Over 100.	Unknown.	January.	February.	March.	April.	May.	June.	July.	August.	September.	October.	November.	December.	Unknown.	Total.	Grand total.
Alstead	Males	2	1	1	1	1	1	1	1	2	1	3	1		2	1	1	1	1	1	1	1	2	1	1	1	1	8	8	7 15
	Females								1	1	1	3	1		1	1	1	1	2	1	1	1	1	1	1	1	1	7	15	
Chesterfield	Males	1	3				1			3	2				2	2	1	2	2	1	2	2	1	1				10	10	9 19
	Females	2								3	4				2	1	1	1	1	1	1	1	3	1	1	1	1	9	19	
Dublin	Males						1			2	1					1	1	1	1	1	1	1	1	1	1	1	1	4	4	1 5
	Females						1																1	1	1	1	1	5	5	
Fitzwilliam	Males	1								2	2	1					1	2	1	2	1	1	1	1		1	1	6	6	12 18
	Females	2			2	2	1	1	1	1	3				2	4	1	4	1	1	2	1	1	1	1	1	1	12	18	
Gilsom	Males	2		1	1	1	2	1	1	1		1				1	2	1	2	2	1	1	1	2				6	6	11 17
	Females	2	1	1	2	2	2	2	2	2	1				1	1	1	1	1	3	1	1	3	1	1	1	1	11	17	
Harrisville	Males								1												1	1	1					1	1	3 4
	Females	2										1			1	1	1	1	1	1	1	1	1					3	4	
Hinsdale	Males	4	2	1	1	1	1	1	1	4	1				1	2	1	2	1	2	2	2	2	2	1	2	1	14	14	11 25
	Females	3		1	2	2	2	2	2	2	1					1	1	1	1	1	1	3	1	1	3	1	1	11	25	

Jaffrey.....	Males	5	2	1	1	1	1	3	2	1	2	2	2	1	1	4	16	...
	Females	1	1	1	3	2	1	1	1	1	2	1	3	1	1	2	11	27
Keene.....	Males	12	...	1	7	4	5	8	6	10	6	...	5	1	6	7	59	...
	Females	5	4	4	6	2	6	11	2	5	7	3	...	4	2	5	65	124
Marlborough.....	Males	4	1	...	3	2	1	...	...	...	2	2	1	3	2	1	13	...
	Females	2	...	2	1	1	1	...	1	...	...	...	2	1	1	1	7	20
Marlow.....	Males	1	...	...	...	1	2	...	2	...	1	1	...	1	...	1	6	...
	Females	1	...	1	1	1	1	2	1	...	1	1	2	1	1	1	8	14
Nelson.....	Males	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
	Females	...	1	...	...	...	1	...	1	...	1	...	1	...	...	...	2	2
Richmond.....	Males	1	1	...	...	1	1	2	2	...	1	2	1	2	1	...	8	...
	Females	1	1	...	...	...	1	1	...	1	...	...	1	1	...	2	4	12
Rindge.....	Males	1	...	1	2	2	1	1	...	...	...	1	...	1	1	1	8	...
	Females	1	...	1	1	1	1	1	2	...	2	...	1	1	2	2	8	16
Roxbury.....	Males	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
	Females	...	...	...	...	...	1	...	...	...	...	...	...	...	...	1	1	1
Stoddard..	Males	1	...	1	...	2	2	1	...	...	4	1	...	1	...	1	7	...
	Females	...	...	...	...	1	1	...	1	...	...	1	...	...	1	...	2	9
Sullivan.....	Males	...	...	...	...	1	...	...	...	...	...	...	...	...	...	1	1	...
	Females	...	...	1	1	1	...	3	...	...	1	...	2	...	1	1	5	6

TABLE No. XVII. — *Continued.*

TOWNS IN CHESHIRE COUNTY. — <i>Continued.</i>		Under 1.	1 to 5.	5 to 10.	10 to 20.	20 to 30.	30 to 40.	40 to 50.	50 to 60.	60 to 70.	70 to 80.	80 to 90.	90 to 100.	Over 100.	Unknown.	January.	February.	March.	April.	May.	June.	July.	August.	September.	October.	November.	December.	Unknown.	Total.	Grand total.
Surry.....	Males.....	1									1	1											1	1	1			2	2	4
	Females.....	1									1	1						1					1					2	4	
Swansey.....	Males.....						2				5	3				2	1		2	3		1	1	1	1	1	1	13	9	22
	Females.....	1						1			2	3	1				2		1			1	1	3			1	9	22	
Troy.....	Males.....		1	1		1	2					1				1										3	2	6	8	14
	Females.....		1	2		3	1					1						2	3							1		8	14	
Walpole.....	Males.....	3				1	1	1	4	5		1				2		2			2	3	1			3	4	17	17	
	Females.....	4				1	1	1	4	5	3	1	1			2	2	3	4	1	3			3	1		3	22	39	
Westmoreland.....	Males.....	2					1	2	1	3	3				1			1			3	1	1	3	2		5	16	16	
	Females.....					2	1	1	1	5	4				1	1		2			2	1	4		2	1	1	15	31	
Winchester.....	Males.....	1	1			1	1	1	3	3		2	1			3		2			3	3		1			2	15	15	
	Females.....	3		1		1		2	1	3	2	2					1		2	1		1	1	2	2	1	4	15	30	

[illegible]

TABLE No. XVII. — *Continued.*

TOWNS IN SULLIVAN COUNTY. — <i>Continued.</i>		Under 1.	1 to 5.	5 to 10.	10 to 20.	20 to 30.	30 to 40.	40 to 50.	50 to 60.	60 to 70.	70 to 80.	80 to 90.	90 to 100.	Over 100.	Unknown.	January.	February.	March.	April.	May.	June.	July.	August.	September.	October.	November.	December.	Unknown.	Total.	Grand total.
Lempster	Males.....										2	1	1				1				1	1	1	1	1				4	4
	Females.....											1	2					2							1				3	7
Newport	Males.....	7	1		1	3	4	2	3	3	1					3	2	2	2	3	1	1	1	2	4	2	2		25	25
	Females.....	2	2		1	1	2	1	5	2	1					1	2	1	1	2	1	2	1	4	2	2	1		17	42
Plainfield	Males.....				1		1						1									1			1	1			3	3
	Females.....		1					1	1	2	1	2									1	2	1	1	1				5	8
Springfield	Males.....	1			1	1	2	2		1								1	1	1	1	3	1					7	7	7
	Females.....									1	1	2					1		1	1					1				4	11
Sunapee	Males.....	1		1	1	1	1	1		2		2		1		1	1	3	2	1				1	1	1		9	9	9
	Females.....	1		1	1					2	1	1						1	2				2		2		7	16	7	
Unity	Males.....		1					2	3							1	1	3				1			1			7	7	7
	Females.....	1		2	1		3	4	2	1						1	2	1	1	2	1	2	1	1	3	1		14	21	
Washington	Males.....	2			2		2						1				1	1	1	1		2			1			7	7	7
	Females.....				1	1	1	1	1	1										2	2	1	1	1				4	11	

[illegible]

[illegible]

* One, sex not stated.

TABLE No. XVII. — *Continued.*

TOWNS IN COÖS COUNTY. — <i>Continued.</i>	Under 1.	1 to 5.	5 to 10.	10 to 20.	20 to 30.	30 to 40.	40 to 50.	50 to 60.	60 to 70.	70 to 80.	80 to 90.	90 to 100.	Over 100.	Unknown.	January.	February.	March.	April.	May.	June.	July.	August.	September.	October.	November.	December.	Unknown.	Total.	Grand total.
Stark	Males	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	2	1	1	1	1	1	1	1	1	3	3
	Females	3	1	1	1	1	1	1	1	1	2	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	7	10
Stratford	Males	1	1	1	1	1	1	1	3	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	7	7
	Females	2	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	2	1	1	1	1	1	1	7	14
Stewartstown	Males	4	1	1	1	1	1	1	1	1	1	1	1	2	1	1	1	1	1	1	1	1	1	2	1	1	1	9	9
	Females	2	1	1	3	1	1	1	1	1	1	1	1	1	1	1	1	1	1	3	2	1	1	1	1	1	1	14	23
Whitefield	Males	8	2	2	2	2	1	1	2	3	3	1	1	1	1	3	2	2	2	1	1	2	1	2	1	4	1	21	21
	Females	2	2	3	1	1	1	2	3	1	1	2	1	1	1	2	4	1	2	1	1	1	1	2	2	3	1	19	40

TABLE
Deaths by Sex,

COUNTIES.		Under 1.	1 to 5.	5 to 10.	10 to 20.	20 to 30.	30 to 40.	40 to 50.	50 to 60.	60 to 70.	70 to 80.	80 to 90.
Rockingham	Males	66	38	13	16	34	29	33	36	62	89	59
	Females	43	27	20	18	25	31	21	41	72	81	72
	Not stated	1										
Strafford	Males	84	33	15	25	30	32	27	33	42	43	27
	Females	65	34	10	28	33	23	30	22	31	51	35
Belknap	Males	36	19	10	9	10	9	12	11	23	37	20
	Females	32	9	7	11	11	11	14	10	9	36	17
	Not stated	2										
Carroll	Males	17	11		3	12	5	9	21	21	41	29
	Females	16	5	3	4	14	13	7	16	17	29	27
	Not stated	1										
Merrimack	Males	85	23	8	9	31	18	34	39	68	76	49
	Females	60	20	7	21	15	42	25	39	54	86	65
Hillsborough	Males	260	73	15	35	57	59	49	61	85	105	62
	Females	219	75	20	42	68	56	73	76	106	90	73
	Not stated	7					1					
Cheshire	Males	40	10	3	3	14	18	16	18	37	45	24
	Females	30	8	2	9	20	9	21	21	32	37	39
Sullivan	Males	21	4	3	4	6	10	6	13	28	25	16
	Females	13	5		5	7	2	6	10	21	24	26
Grafton	Males	40	16	10	18	27	15	12	34	50	51	42
	Females	28	18	6	19	21	15	20	39	31	53	43
Coös	Males	54	29	9	12	27	11	12	13	22	18	18
	Females	45	30	15	13	18	6	8	10	22	20	15
	Not stated		2									
Total	Males	703	256	86	134	248	206	210	279	438	530	346
	Females	551	231	90	170	232	208	225	284	395	507	412
	Not stated	11	2				1					

No. XVIII.

*Age, and Month.**

90 to 100.	Over 100.	Unknown.	January.	February.	March.	April.	May.	June.	July.	August.	September.	October.	November.	December.	Unknown.	Total.	Grand total.
3 ..	13	40	34	49	35	40	34	40	46	43	35	39	56	..	491	.....
18 1	6	38	29	40	39	40	30	39	43	49	45	25	59	..	476	.....
...	...	1	...	...	...	...	...	...	...	...	...	...	...	...	1	968	
6 ..	3	28	23	35	33	38	29	35	41	31	29	31	45	2	400	.....
9 ..	4	44	42	35	32	33	26	28	24	31	26	20	34	..	375	775	
6 ..	3	12	12	14	18	21	25	15	20	16	19	10	20	3	205	.....
4 ..	4	8	8	10	11	17	17	15	16	17	13	17	25	1	175	.....
...	...	...	...	...	...	...	...	...	1	...	1	...	...	...	2	382	
5 ..	5	17	13	19	14	15	11	7	17	14	16	16	19	1	179	.....
6 ..	1	10	8	22	9	16	7	11	14	15	15	10	20	1	158	.....
...	...	1	...	...	...	...	...	...	...	...	...	...	...	...	1	348	
11 ..	1	31	23	37	24	37	39	40	33	62	30	30	61	5	452	.....
12 ..	8	26	36	38	37	40	29	44	52	32	36	36	48	..	454	906	
5 ..	26	56	61	53	66	71	67	80	129	69	57	70	108	5	892	.....
16 ..	11	63	55	55	69	67	78	91	95	82	89	54	126	1	925	.....
...	...	...	1	...	1	...	2	1	2	...	1	...	...	...	8	1,825	
4 ..	4	24	10	22	17	21	19	19	17	20	14	22	30	1	236	.....
7 1	2	20	12	20	22	25	23	15	22	20	20	11	27	1	238	474	
5 ..	2	15	13	15	17	13	8	10	13	10	14	6	9	...	143	.....
10 ..	1	8	9	7	13	8	13	9	16	15	9	9	14	...	130	273	
6 ..	5	33	27	27	21	34	34	18	23	36	24	21	26	2	326	.....
6 ..	7	29	21	27	31	26	18	24	22	22	34	23	27	2	306	632	
1 ..	7	19	15	25	12	20	23	17	20	18	17	21	24	2	233	.....
9 1	4	11	14	14	17	21	17	20	15	18	19	24	22	4	216	.....
...	1	...	...	...	1	...	...	...	...	1	1	...	...	...	3	452	
52 ..	69	275	231	296	257	310	289	281	359	319	255	266	398	21	3,557	.....
97 3	48	257	234	268	280	293	258	296	319	301	306	229	402	10	3,453	.....
...	1	1	1	1	1	1	...	2	2	3	2	1	...	...	15	7,025	

* Not including premature births and still-births.

TABLE No. XIX.

Causes of Death alphabetically arranged, by Ages, Sex, and Months.

Months.												Whole Number.			Ages.																
Sex.	January.	February.	March.	April.	May.	June.	July.	August.	September.	October.	November.	December.	Unknown.	Total.	Male.	Female.	Unknown.	Under 1.	1 to 5.	5 to 10.	10 to 15.	15 to 20.	20 to 30.	30 to 40.	40 to 50.	50 to 60.	60 to 70.	70 to 80.	Over 80.	Unknown.	
M.								1						2	1	1						1									
F.											1							1													
M.				1										3	1	2									1						
F.				1		1														1											
F.			1	1					1					3		3		1	1					1							
M.	1													1		1															
M.				1					1	1				1		1												1	1		
M.		1		1	1	1	1							3		3											1	1			
M.		1								1				6	6				1			2					2	1			
M.														1	1																
F.								1						1		1															
F.								1						1		1															
F.										1				1		1															
F.														1		1															
M.						1	1	5	4	4	2	2		46	35	10	1		1	1	2	5	4	5	4	5	4	2	4	3	
M.	6	3	2	1	1	1	1	1	1	1	1	1		2	1	1			1	2	1	1	1	1	2	1	2	1	3	1	
F.	1		1	1	1	1	1	1	1	3	2																				
M.		1												2	1	1															
F.																															
F.																															
M.						1	1	1						11	3	8			1							2					

[illegible]

*Classed with males.

M. 33	24	27	32	24	26	21	22	32	21	29	18	2	Consumption	695	311	384	11	10	2	523	78	60	46	36	16	15	4	5	
F. 36	30	25	34	43	35	39	26	30	31	19	36	..	"	..	..	..	8	9	7	12	47	96	71	43	31	21	28	6	5
M. 6	4	4	5	5	1	5	3	1	1	3	2	..	Convulsions	71	40	31	25	14	..	..	..	..	..	..	..	..	..	..	1
F. 2	2	2	3	6	1	3	1	2	3	..	6	..	"	..	..	..	23	5	2	..	..	..	..	..	..	..	..	..	..
F. 1	..	1	..	..	..	..	..	..	..	..	..	..	Cough	1	..	1	1	..	..	..	..	..	..	..	..	..	..	..	..
M. 2	6	2	3	2	2	..	2	1	..	4	9	..	Croup	56	33	23	42	0	7	2	..	..	..	..	..	..	..	..	..
F. 5	2	3	1	1	..	..	3	1	4	3	..	..	"	..	..	..	7	12	3	..	..	..	..	..	..	..	..	..	1
M. 1	1	..	..	1	..	..	..	..	..	..	..	..	Cyanosis	6	3	3	2	..	..	..	..	..	..	..	..	..	..	..	1
F. 1	1	..	..	..	..	..	..	..	..	..	1	..	"	..	..	..	3	..	..	..	..	..	..	..	..	..	..	..	..
M. 3	3	3	2	5	5	3	1	1	1	..	1	..	Cystitis	30	28	2	..	..	..	..	..	1	1	..	..	..	..	..	3
F. 4	2	2	3	2	5	2	1	2	2	1	..	..	"	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	2
M. 4	2	2	3	2	5	2	1	2	2	1	..	..	Debility	56	28	28	..	..	..	..	..	..	..	..	..	..	..	..	9
F. 6	1	2	3	2	..	..	2	3	4	1	4	..	"	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	10
M. 5	4	2	4	1	7	5	3	1	4	3	2	2	Debility, infantile	84	43	41	41	1	..	..	..	..	..	..	..	..	..	..	1
F. 1	1	5	5	..	2	5	5	4	6	3	3	1	"	..	..	..	36	4	..	..	..	..	..	..	..	..	..	..	1
M. 1	1	1	..	1	..	..	..	2	1	2	..	..	Dementia	15	8	7	..	..	..	..	..	..	..	..	..	..	..	..	1
F. 1	2	..	1	1	1	..	2	..	..	..	..	..	"	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	6
M. 1	..	..	..	..	..	..	1	..	..	..	..	..	Delirium tremens	1	1	..	..	..	..	..	..	..	..	..	..	..	..	..	1
M. 1	1	3	..	1	1	..	4	..	2	1	1	..	Diabetes	35	14	21	..	..	..	..	..	..	..	..	..	..	..	..	3
F. 2	1	2	3	1	1	1	1	1	1	4	4	..	"	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	1
M. 1	3	1	2	5	..	..	5	2	2	2	1	..	Diarrhœa	46	24	22	10	2	..	..	..	..	..	..	..	..	..	..	1
F. 3	1	..	3	1	1	..	4	1	6	2	..	..	"	..	..	..	14	1	..	..	..	..	..	..	..	..	..	..	3
M. 4	5	9	6	11	7	2	7	14	10	9	5	1	Diphtheria	160	89	70	34	525	8	3	1	3	..	..	..	..	..	..	1
F. 8	10	4	5	6	5	3	5	5	4	5	8	2	"	..	..	..	29	23	9	4	1	1	..	..	..	..	..	..	1
M. 1	2	1	1	1	1	..	1	3	1	..	1	..	Dropsy	39	10	29	..	..	..	..	..	..	..	..	..	..	..	..	2
F. 3	1	1	1	1	1	5	2	4	3	2	5	..	"	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	1
M. 2	2	2	1	1	5	8	7	4	3	1	8	..	Drowned	43	41	2	..	..	..	..	..	..	..	..	..	..	..	..	2
F. 1	1	1	..	..	..	..	..	..	..	..	..	..	"	..	..	..	1	..	..	..	..	..	..	..	..	..	..	..	..
M. 1	1	1	1	1	1	..	3	8	6	2	..	..	Dysentery	51	22	29	8	2	2	..	..	..	..	..	..	..	..	..	15
F. 1	..	..	2	2	..	..	10	6	5	1	..	..	"	..	..	..	4	5	1	..	..	..	..	..	..	..	..	..	3

* Classed with males.

TABLE No. XIX. — *Continued.*

Sex.	Months.												CAUSES OF DEATH.				Whole Number.			Ages.											
	January.	February.	March.	April.	May.	June.	July.	August.	September.	October.	November.	December.	Unknown.	Total.	Male.	Female.	Unknown.	Under 1.	1 to 5.	5 to 10.	10 to 15.	15 to 20.	20 to 30.	30 to 40.	40 to 50.	50 to 60.	60 to 70.	70 to 80.	Over 80.	Unknown.	
M.				1										Hæmatemesis.	2	1	1						1								
F.													1	"						1											
M.													2	Headache	4	2	2		2												
F.													1	"																	
M.	16	20	31	20	26	24	24	20	21	19	23	25	1	Heart disease.	477	269	207	*1	3	2	1	1	5	7	12	18	26	61	87	46	1
F.	13	13	16	16	23	23	20	18	15	15	21	14		"				3	2	1	4	4	11	20	26	55	51	28	2		
M.	1													Endocarditis	3	1	2										1				
F.	1						1							"														1	1		
M.				1			1			1		1		Heart, fatty degeneration of	10	4	6													2	
F.						1	1	1				2		"										1		2	3				
M.														" hypertrophy of	4	1	3									1					
F.							1			1				"														1	1		
M.							2					2		" neuralgia of	14	5	9								2	1	2				
F.							2			1				"												1	2	1	2		
M.	2						1	1	2					" paralysis of	12	8	4			1				1	1	1	2	2			
F.	1													"						1	1							1	1		
M.	1					1	1		1					" rheumatism of	9	5	4									1	2	2			
F.						1	1							"													3	1			
M.							1							" thrombosis of	3	1	2											1			

F.	5	6	6	2	5	1	4	3	6	2	5	8	1	2	Heart, thrombosis of	128	62	63	6	1	3	5	2	6	9	17	12	1	
M.	9	6	7	12	9	4	2	3	4	1	5				" failure	2			3	1	2	3	1	5	12	8	21	9	1
F.															" clot	8	1	7											1
M.															Hemorrhage	2		2											1
F.	1	2													"	8	1	7											1
F.															post-partum	1		1											1
F.															of bowels	2	1	1											1
M.															"														1
F.															"														1
F.															rectal	1		1											1
F.															"														1
M.	1														of stomach	5	2	3											1
F.	1	1													"														1
M.	1														Hemiplegia	8	3	5											1
F.															"														1
F.															Hepatitis	4		4											1
F.															Hernia	9	7	2											1
M.	2	2													"														2
F.															Hodgkin's disease	1	1												1
M.															Homicide	1		1											1
M.	1	2	2	1											Hydrocephalus	22	16	6											1
F.	1	1													"														3
M.															Hydrophobia	1	1												1
M.															Hydrothorax	1	1												1
M.	2	2	1	1	5										Inanition	39	21	18											1
F.	1														"														2
M.															Indigestion	5	1	4											2
F.															"														1
M.															Inflammation of bladder	4	3	1											1
F.	1	1													"														1
M.															"														1

*Classed with males.

M. 1	1	1	1	1	1	2	1	1	1	8	6	2	1	3	1	1	1
F. 1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
M. 2	2	1	1	1	1	1	1	1	1	9	5	4	1	1	1	2	2
F. 1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
M. 2	2	4	3	1	4	2	1	1	1	41	19	22	1	3	3	5	2
F. 2	2	4	1	3	3	1	5	1	2	1	2	1	1	3	8	6	1
M. 1	1	3	1	1	1	1	1	1	1	13	8	5	1	1	5	1	1
F. 1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
M. 1	1	1	1	1	1	1	1	1	1	6	2	4	1	1	1	1	1
F. 1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
M. 1	1	1	1	1	1	1	1	1	1	8	4	4	1	2	1	1	1
F. 1	1	1	1	1	1	2	1	1	1	1	1	1	1	1	1	1	1
M. 1	1	1	1	1	1	1	1	1	1	9	4	5	2	2	1	1	1
F. 1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
M. 1	1	1	1	1	1	1	1	1	1	10	8	2	8	2	1	1	1
F. 1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
M. 1	1	1	1	1	1	1	1	1	1	11	8	3	8	1	1	1	1
F. 1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
M. 1	1	1	1	1	1	1	1	1	1	4	3	1	1	1	1	1	1
F. 1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
M. 2	2	1	2	4	2	6	3	4	1	68	31	37	23	2	2	2	2
F. 5	3	1	1	5	4	6	4	2	1	19	2	1	19	2	4	2	5
M. 1	1	1	1	2	4	1	1	1	1	19	8	11	3	3	1	1	1
F. 1	1	1	1	1	5	1	1	1	1	3	3	1	3	3	1	1	1
M. 3	3	2	4	2	1	6	3	1	4	70	37	33	18	10	5	1	1
F. 3	1	6	3	1	2	3	2	3	1	14	7	3	1	1	3	1	1
M. 1	1	1	1	1	1	1	1	1	1	15	7	8	1	4	1	1	1
F. 1	1	1	1	1	1	1	1	1	1	3	1	1	1	2	1	1	1
F. 1	1	1	1	1	1	1	1	1	1	5	5	5	1	3	1	1	1

* Classed with males.

M. 10	9	16	9	10	13	17	23	16	8	17	24	4	Not stated..	326	167	150	9	88	18	2	1	5	3	3	7	11	19	8	11		
F. 3	13	12	15	8	14	11	21	6	21	6	20	..	"	..	..	..	..	73	13	3	1	4	5	4	10	13	11	10	3		
M. 12	7	11	4	11	12	12	14	13	11	17	..	..	Old age...	385	136	249	..	..	..	..	..	..	..	..	..	..	..	2	19	113	2
F. 20	20	18	19	23	18	14	15	21	17	35	..	..	"	..	..	..	..	..	..	..	..	..	..	..	..	..	..	3	40	205	1
F. ...	1	..	..	..	..	1	..	..	..	..	..	..	Ovarian dropsy	1	..	1	..	..	..	..	..	1	..	..	..	..	..	..	..	..	..
F. ...	1	..	..	..	..	..	..	..	..	..	..	..	Obstipation	1	..	1	..	..	..	..	..	1	..	..	..	..	..	..	..	..	..
M. ...	..	..	..	..	..	..	..	..	1	..	..	..	Edema of glottis	2	1	1	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
F. ...	..	..	..	..	..	..	..	..	..	..	..	..	"	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
M. 10	6	12	7	16	9	4	6	2	9	14	17	..	Paralysis	225	112	113	..	1	1	1	1	1	1	2	3	10	17	40	35	1	
F. 6	7	7	5	12	9	11	11	13	12	5	15	..	"	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
F. ...	1	..	2	..	..	..	..	1	..	..	..	..	Paramenia...	4	..	4	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
F. ...	1	..	1	..	..	..	..	..	..	..	..	..	Parotitis...	1	..	1	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
F. ...	1	..	..	..	..	..	..	..	..	..	..	..	Paraplegia...	1	..	1	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
M. ...	..	..	..	..	..	..	..	..	..	..	..	..	Perityphlitis	1	1	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
M. 1	..	..	..	..	..	..	..	..	..	..	..	..	Piles	1	1	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
F. ...	..	..	..	..	..	..	..	..	..	..	..	..	Pelvic cellulitis	1	..	1	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
M. 1	..	1	1	..	..	..	..	..	1	..	..	..	Pericarditis	9	4	5	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
F. ...	1	1	..	..	..	..	..	..	..	..	..	..	"	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
M. 2	1	3	1	5	2	3	3	..	1	1	..	..	Peritonitis...	62	22	40	..	1	1	..	..	..	..	..	..	..	..	..	..	..	..
F. 2	2	5	3	2	5	4	5	2	1	5	4	..	"	..	..	..	..	3	1	2	2	5	8	5	4	1	3	..	..	..	..
M. ...	..	..	..	..	..	..	..	..	..	..	..	..	Phlegmon	2	1	1	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
F. ...	..	..	..	..	..	..	..	..	..	..	..	..	"	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
M. ...	2	..	..	1	..	..	..	..	1	..	..	..	Pleurisy	12	5	7	..	1	..	..	..	..	..	..	..	..	..	..	..	..	..
F. 1	1	1	..	..	..	..	..	..	1	1	2	..	"	..	..	..	..	1	..	..	..	..	..	..	..	..	..	..	..	..	..
M. 36	25	40	31	50	22	4	5	6	9	19	71	1	Pneumonia	62	43	18	305*	1	46	18	8	4	4	18	17	20	35	55	48	41	5
F. 37	31	38	36	35	17	5	2	7	13	15	68	1	"	..	..	..	..	27	19	5	2	5	15	8	14	34	51	72	51	2	..
M. ...	2	2	4	2	4	..	..	1	..	210	..	..	Pneumonia-typhoides	47	29	18	..	..	3	2	..	1	6	4	2	3	2	4	2	..	..
F. ...	2	2	3	6	..	..	..	..	1	1	3	..	"	..	..	..	..	3	..	..	..	..	1	4	2	2	1	2	2	1	..
M. ...	1	..	..	..	..	..	..	..	..	..	..	..	Poisoned	5	3	2	..	1	..	..	..	..	..	..	..	..	..	..	..	..	..

*Classed with males.

[illegible]

*Classed with males.

June	Males	48	19	8	11	21	18	18	20	42	34	40	10	289
	Females	31	15	10	13	12	22	24	18	30	37	43	3	258
July	Males	94	11	6	10	18	15	16	17	26	36	27	5	281
	Females	78	20	5	13	17	23	22	15	30	40	29	4	296
	Not stated	2												2
August	Males	139	29	9	14	18	13	11	25	34	29	29	9	359
	Females	108	20	12	10	21	19	18	18	26	36	28	3	319
September	Males	89	30	12	14	23	23	13	16	24	39	29	7	319
	Females	81	23	7	13	15	17	15	24	31	32	39	4	301
	Not stated	1	1				1							3
October	Males	54	23	12	13	19	14	18	19	20	22	38	3	255
	Females	60	22	6	15	17	14	15	25	37	54	35	6	306
	Not stated	1											1	2
November	Males	37	22	5	11	29	19	19	16	22	49	34	3	266
	Females	18	11	7	14	26	17	15	28	26	29	35	3	229
	Not stated	1												1
December	Males	44	32	5	14	31	14	22	40	74	71	42	8	398
	Females	44	23	12	12	21	22	25	36	58	69	71	9	402
No date	Males	6	1						1	3	5	1	5	21
	Females	2	2	1		1				1		2	1	10
Total	Males	703	256	86	134	248	206	210	279	438	530	398	69	3,557
	Females	551	231	90	170	232	208	225	284	395	507	512	48	3,453
	Not stated	11	2				1						1	15

* Not including premature and still births.

SUMMARY OF REGISTRATION REPORT.

The following summary of observations is intended to present in a concise form a brief review of some of the more important facts shown by the registration of births, marriages, divorces, and deaths in the State of New Hampshire for the year 1891.

There were reported for the year 7,510 births, 3,904 marriages, and 7,310 deaths. The rates for the year are as follows :

Birth-rate	19.94 to 1,000 of the population.
Marriage-rate	9.61 " " "
Persons married	19.22 " " "
Death-rate	19.56 " " "

TABLE No. 1.
Population of Counties in 1880 and 1890.

COUNTIES.	1880.	1890.
Rockingham	49,064	49,650
Strafford	35,558	38,442
Belknap	17,948	20,321
Carroll	18,224	18,124
Merrimack	46,300	49,435
Hillsborough	75,634	93,247
Cheshire	28,734	29,579
Sullivan	18,161	17,304
Grafton	38,788	37,217
Coös	18,580	23,211
Total	346,991	376,530

TABLE No. 2.

*Population of New Hampshire for each Year from 1880 to 1891, inclusive.**

YEARS.	Population.	YEARS.	Population.
1880.....	346,991	1886.....	364,767
1881.....	349,952	1887.....	367,728
1882.....	352,913	1888.....	370,689
1883.....	355,874	1889.....	373,650
1884.....	358,845	1890.....	376,530
1885.....	361,806	1891.....	379,491

* Population estimated for all but census years.

The increase of the population of the State has been of very nearly even growth, hence by averaging the increase we are able to present a table showing the yearly population of the State from 1880 to 1891, inclusive. It is believed that this table is very nearly correct.

TABLE No. 3.

*Births, Marriages, and Deaths, with the Population and Rates, for 1884 to 1891, inclusive.**

YEARS.	Population.	Births.	Marriages.	Deaths.	Birth-rate per 1,000.	Persons married to 1,000.	Death-rate per 1,000.
1884.....	358,845	6,247	3,292	6,194	17.40	18.34	17.26
1885.....	361,806	6,319	3,180	6,201	17.46	17.56	17.13
1886.....	364,767	6,657	3,324	6,426	18.24	18.22	17.61
1887.....	367,728	6,910	3,495	6,479	18.78	19.00	17.61
1888.....	370,689	6,443	3,379	6,854	17.38	18.22	18.48
1889.....	373,650	6,912	3,621	6,696	18.49	19.36	17.91
1890.....	376,530	6,946	3,621	7,368	18.44	19.22	19.56
1891.....	379,491	7,510	3,904	7,310	19.94	20.72	19.41
Average	369,188	6,743	3,477	6,691	18.27	17.54	18.13

* Population estimated for all but census years.

Table No. 3 shows the population of the State “estimated for all except census years,” the number of births, marriages, and deaths, together with the birth, marriage, and death-rates to each 1,000 of the population for the years 1884 to 1891, inclusive, with the average for those years.

BIRTHS.

There were returned for the year 1891, 7,510 births, a larger number than ever before reported in a single year. That the birth records of New Hampshire are incomplete is shown by this as well as previous registration reports. For the past two years there has been a better return made than heretofore, but the record is still far from complete.

The birth-rate per 1,000 of the estimated population for the past eight years is as follows:

For 1884, 17.44; 1885, 17.46; 1886, 18.24; 1887, 18.78; 1888, 17.38; 1889, 18.49; 1890, 18.44; 1891, 19.94.

TABLE No. 4.

Births in Cities for 1891, with Rate per 1,000.

CITIES.	Population of 1890.	Births.	Birth-rate per 1,000.
Portsmouth	9,827	127	12.92
Dover	12,790	315	24.62
Concord	17,004	422	24.81
Manchester	44,126	963	21.82
Nashua	19,311	662	34.28
Keene	7,446	162	21.75
Rochester	7,396	156	21.09

Table No. 4 gives the birth-rates for the several cities of the State for the year 1891, together with the percentage of the rate to each 1,000 of the population.

TABLE No. 5.

Percentage of American and Foreign Births, by Counties, 1891.

COUNTIES.	PARENTS.			Births with parentage not stated.
	American-born.	Foreign-born.	One foreign-born.	
Rockingham	65.96	17.80	11.91	33
Strafford	44.71	40.29	14.53	20
Belknap	52.16	32.43	12.16	22
Carroll	75.98	9.42	11.59	10
Merrimack	53.68	32.36	13.47	26
Hillsborough	34.04	44.35	13.99	123
Cheshire	59.30	22.92	14.78	18
Sullivan	68.28	16.46	12.62	8
Grafton	65.65	13.37	15.81	34
Coös	31.41	45.53	15.61	40
Total for State	49.19	32.72	16.65	334

A statement of the births by counties from 1880 to 1891, inclusive, may be found in table I. A record of births by towns, giving sex, rate per 1,000 of the population and nativity of patients may be found in table III. The relative proportion of male to female births may be found in table IV. The percentage of American and foreign born parents will be found in table No. 5.

MARRIAGES.

The total number of marriages returned for the year 1891 is 3,904, or 227 more than were returned the previous year. This increase of marriage-rate, 10.36 couples, or 20.72 persons per 1,000 of the population.

TABLE No. 6.

Marriage-rates for 1882 to 1891, inclusive.

YEARS.	Marriages.	Persons married to 1,000 living.*	Number living to one mar- riage.
1882.....	3,433	19.44	103
1883.....	3,495	19.68	102
1884.....	3,292	18.34	109
1885.....	3,180	17.56	114
1886.....	3,324	18.22	109
1887.....	3,495	19.00	105
1888.....	3,379	18.22	109
1889.....	3,621	19.36	103
1890.....	3,621	19.22	103
1891.....	3,904	20.72	97
Average	3,474	18.98	105

* Population estimated for all but census years.

Table No. 6 exhibits the number of persons married in New Hampshire from 1882 to 1891, inclusive, with a rate to each 1,000 of the population, and the estimated number of living persons to each marriage.

TABLE No. 7.

Marriages by Counties from 1882 to 1891, inclusive.

COUNTIES.	1882.	1883.	1884.	1885.	1886.	1887.	1888.	1889.	1890.	1891.
Rockingham..	419	399	419	447	440	457	420	484	458	507
Strafford	428	425	415	388	418	420	416	377	457	466
Belknap.....	166	198	147	150	183	213	183	186	178	200
Carroll	159	175	171	182	177	149	163	176	155	200
Merrimack....	364	432	344	361	345	421	405	423	473	430
Hillsborough..	1,025	949	886	815	876	915	879	1,013	939	1,043
Cheshire	232	262	238	233	240	255	221	250	237	289
Sullivan.....	149	167	138	109	140	123	146	154	172	175
Grafton	319	339	332	327	318	328	322	343	314	338
Coös	172	149	202	168	187	214	224	215	238	256
Total.....	3,433	3,495	3,292	3,180	3,324	3,495	3,379	3,621	3,621	3,904

TABLE No. 8.

*Marriage-rates for 1882 to 1891, inclusive, by Counties.**

COUNTIES.	1882.	1883.	1884.	1885.	1886.	1887.	1888.	1889.	1890.	1891.
Rockingham...	8.51	8.09	8.49	9.04	8.89	9.22	8.45	9.72	9.22	10.21
Strafford	11.84	11.66	11.30	10.48	11.21	11.17	10.98	9.88	11.88	12.12
Belknap.....	9.01	10.61	7.78	7.84	9.45	10.87	9.23	9.27	8.75	9.84
Carroll	8.73	9.62	9.40	10.01	9.74	8.21	8.98	9.71	8.55	11.03
Merrimack....	7.75	9.14	7.23	7.54	7.16	8.68	8.30	8.61	9.56	8.69
Hillsborough .	12.95	11.73	10.72	9.65	10.17	10.41	9.80	11.08	10.07	11.18
Cheshire	8.01	9.02	8.01	7.97	8.18	8.66	7.48	8.43	8.01	9.77
Sullivan	8.28	9.27	7.74	6.14	7.93	7.00	8.35	8.86	9.93	10.11
Grafton	8.28	8.83	8.68	8.59	8.38	8.68	8.55	9.15	8.43	9.10
Coös	8.82	7.46	9.89	8.04	8.76	9.82	10.07	9.47	10.25	11.03
Average...	9.72	9.84	9.17	8.78	9.11	9.50	9.11	9.68	9.61	10.31

* Population estimated for all but census years.

TABLE No. 9.

*Marriages and Marriage-rates by Months and Quarters, from 1883 to 1891, inclusive.**

MONTHS.	MARRIAGES REGISTERED.										PERCENTAGE OF MARRIAGES.										
	1883.	1884.	1885.	1886.	1887.	1888.	1889.	1890.	1891.	Quarters.	1883.	1884.	1885.	1886.	1887.	1888.	1889.	1890.	1891.	Quarters.	
January . . .	359	270	254	252	303	284	283	309	305	6,473	10.38	8.25	8.02	7.61	8.74	8.45	7.87	8.53	7.84	20.79	
February . . .	236	264	201	191	237	242	212	215	248		6.83	8.06	6.35	5.77	6.84	7.20	5.89	5.92	6.37		20.79
March	215	184	162	224	178	185	240	203	217		6.22	5.62	5.12	6.77	5.13	5.50	6.67	5.60	5.58		
April	230	231	274	212	250	259	255	295	293	7,533	6.65	7.05	8.65	6.40	7.21	7.71	7.09	8.14	7.53	24.19	
May	282	253	244	307	276	247	306	260	275		8.16	7.73	7.71	9.28	7.96	7.35	8.51	7.18	7.07		24.19
June	239	268	269	325	316	341	342	338	346		6.91	8.19	8.50	9.82	9.11	10.14	9.51	9.33	8.89		
July	233	242	200	223	259	205	270	230	262	7,354	6.74	7.39	6.32	6.74	7.47	6.10	7.51	6.35	6.74	23.62	
August	271	221	222	239	247	239	282	262	322		7.84	6.75	7.01	7.22	7.12	7.11	7.84	7.23	8.28		23.62
September . . .	270	324	311	315	298	315	321	380	391		7.81	9.90	9.82	9.52	8.59	9.37	8.92	10.49	10.06		
October	350	332	320	343	376	377	351	360	407	9,772	10.12	10.14	10.11	10.36	10.84	11.22	9.76	9.94	10.49	31.38	
November	423	386	374	388	427	381	409	443	467		12.24	11.79	11.81	11.72	12.31	11.34	11.37	12.26	12.01		31.38
December	349	299	335	291	301	286	326	316	355		10.10	9.13	10.58	8.79	8.68	8.51	9.06	8.72	9.13		
Total	3,457	3,274	3,166	3,310	3,468	3,361	3,597	3,611	3,888	31,132											

* Not including those with date not given.

TABLE No. 10.

Marriages for nine years, 1883 to 1891, inclusive, by Ages.

SEX.	Under 20.	20 to 25.	25 to 30.	30 to 35.	35 to 40.	40 to 45.	45 to 50.	50 to 55.	55 to 60.	60 to 70.	70 to 80.	Over 80.	Not stated.
Males...	1,513	11,570	8,241	3,674	1,922	1,106	870	588	428	613	219	17	648
Females	8,469	11,663	5,060	2,122	1,230	737	509	328	194	207	33	1	757

TABLE No. 11.

Marriages according to Nativity.— Percentages 1882 to 1891, inclusive.

YEARS.	Both American.	Both foreign.	Groom American.	Bride American.	Not stated.
1882	65.74	12.09	5.13	4.14	12.90
1883	66.15	12.62	5.38	4.18	11.67
1884	69.44	12.91	5.32	3.92	8.41
1885	69.75	11.57	4.97	4.84	8.87
1886	67.87	13.39	6.50	5.08	7.16
1887	65.72	15.79	6.07	5.49	6.93
1888	64.22	17.16	7.10	6.31	5.21
1889	64.32	17.04	7.40	6.55	4.69
1890	62.19	18.58	7.53	7.15	4.53
1891	62.45	18.49	7.38	6.74	4.94

TABLE No. 12.

*Proportion of American to Foreign Born Persons Married, for 1882 to 1891, inclusive.**

YEARS.	American-born.	Foreign-born.
1882	80.80	19.20
1883	80.30	19.70
1884	80.86	19.14
1885	81.92	18.08
1886	79.34	20.66
1887	76.82	23.18
1888	74.82	25.18
1889	74.80	25.20
1890	65.14	34.86
1891	73.12	26.87

* Excluding those with nativity not stated.

TABLE No. 13.

Percentages of American and Foreign Born Persons Married, by Counties, from 1882 to 1891, inclusive.

YEARS.	State.	Rockingham.	Strafford.	Belknap.	Carroll.	Merrimack.	Hillsborough.	Cheshire.	Sullivan.	Grafton.	Coos.
1882 { American	80.80	90.89	80.98	75.90	97.43	84.25	66.08	88.64	90.08	93.38	81.17
1882 { Foreign	19.20	9.11	19.02	24.10	2.57	15.75	33.92	11.36	9.92	6.62	18.83
1883 { American	80.30	89.63	82.05	82.78	94.22	84.17	62.84	89.57	96.92	89.63	75.76
1883 { Foreign	19.70	10.37	17.95	17.22	5.78	15.83	37.16	10.43	3.08	10.37	24.24
1884 { American	80.86	86.68	76.32	88.11	97.71	85.83	65.30	90.32	93.65	92.18	76.44
1884 { Foreign	19.14	13.32	23.68	11.89	2.29	14.17	34.70	9.68	6.35	7.82	23.56
1885 { American	81.92	86.95	81.25	83.58	97.26	87.09	67.52	90.05	91.33	89.63	76.60
1885 { Foreign	18.08	13.05	18.75	16.42	2.74	12.91	32.48	9.95	8.67	10.37	23.40
1886 { American	79.34	87.01	79.82	75.14	96.18	83.74	62.90	91.27	89.00	90.53	71.50
1886 { Foreign	20.66	12.99	20.18	24.86	3.82	16.26	37.10	8.73	11.00	9.47	28.50
1887 { American	76.82	87.15	75.70	78.71	93.88	80.29	60.59	82.98	93.97	88.50	66.42
1887 { Foreign	23.18	12.85	24.30	21.29	6.12	19.71	39.41	17.02	6.03	11.50	33.58
1888 { American	74.82	84.03	77.10	78.53	93.91	76.93	54.94	84.47	88.73	88.96	74.07
1888 { Foreign	25.18	15.97	22.90	21.46	6.09	23.07	45.06	15.53	11.27	11.04	25.93

1889 {	American	74.80	84.85	72.41	82.56	93.39	79.90	56.96	85.99	90.00	88.84	65.17
	Foreign	25.20	15.15	27.59	17.44	6.61	20.10	43.04	14.01	10.00	11.16	34.83
1890 {	American	65.14	76.39	63.57	74.25	87.75	68.01	47.48	77.44	83.63	80.95	45.30
	Foreign	34.86	23.61	36.43	25.75	12.25	31.99	52.52	22.56	16.37	19.05	54.70
1891 {	American	73.12	82.82	76.10	76.98	86.38	73.24	57.28	82.35	83.53	88.03	65.06
	Foreign	26.87	17.17	23.89	23.02	13.61	26.75	42.72	17.65	16.47	11.97	34.94

DIVORCES.

TABLE No. 14.

Divorces decreed from 1870 to 1891, inclusive, by Counties.

COUNTIES.	1870	1871	1872	1873	1874	1875	1876	1877	1878	1879	1880	1881	1882	1883	1884	1885	1886	1887	1888	1889	1890	1891
Rockingham.....	19	20	29	34	41	23	37	18	30	30	44	30	23	21	28	25	40	41	26	43	42	47
Stafford.....	12	6	24	27	25	17	20	29	29	34	58	42	36	53	32	28	46	24	41	36	38	30
Belknap.....	...	7	7	13	12	10	18	16	16	16	22	17	14	15	19	20	24	25	26	27	25	37
Carroll.....	4	1	1	9	9	4	10	13	19	13	11	19	9	7	14	20	12	12	22	20	20	17
Merrimack.....	15	27	32	13	51	37	40	23	22	36	41	25	49	49	48	35	46	48	49	42	53	52
Hillsborough.....	64	37	58	51	77	75	65	73	61	69	83	87	90	74	93	86	110	78	82	87	95	115
Cheshire.....	12	19	19	16	15	22	21	17	18	22	31	21	34	25	30	25	32	26	29	31	32	32
Sullivan.....	6	6	10	16	17	13	26	9	10	8	9	22	17	12	11	20	25	20	26	18	22	13
Grafton.....	13	21	15	29	22	20	20	29	17	27	25	37	27	14	28	22	30	35	40	39	33	49
Coös.....	4	5	2	4	12	11	9	10	11	10	15	7	15	3	12	10	17	16	18	25	22	20
Total.....	149	149	197	212	281	232	266	237	233	265	339	307	314	273	315	291	382	325	359	368	382	412

Table No. 14 shows the number of divorces decreed from 1870 to 1891, inclusive, by counties.

TABLE No. 15.

Ratio of Divorces to Marriages from 1882 to 1891, inclusive.

YEARS.	Number of marriages.	Marriage-rate per 1,000.	Number of divorces.	Ratio of divorces to marriages.
1882.....	3,433	19.44	314	1 to 10.93
1883.....	3,495	19.68	273	1 to 12.80
1884	3,292	18.34	315	1 to 10.45
1885.....	3,180	17.56	291	1 to 10.92
1886.....	3,324	18.22	382	1 to 8.70
1887.....	3,495	19.00	325	1 to 10.75
1888... ..	3,379	18.22	386	1 to 8.75
1889.....	3,621	19.22	368	1 to 9.83
1890.....	3,621	19.22	382	1 to 9.48
1891.....	3,904	19.22	412	1 to 10.55

Table No. 15 shows the ratio of divorces to marriages from 1882 to 1891, inclusive.

TABLE No. 16.

Ratio of Divorces to Marriages, by Counties, for 1891.

COUNTIES.	Number of marriages.	Number of divorces.	Ratio of di- vorces to marriages.
Rockingham.....	507	47	1 to 10.90
Strafford	466	30	1 to 15.36
Belknap.....	200	37	1 to 5.40
Carroll	200	17	1 to 1.18
Merrimack	430	52	1 to 8.27
Hillsborough	1,043	115	1 to 9.07
Cheshire	289	32	1 to 9.03
Sullivan.....	175	13	1 to 13.46
Grafton	338	49	1 to 6.08
Coös	256	20	1 to 12.80
Total	3,904	412	1 to 9.72

DEATHS.

In the following pages will be found a brief summary of the causes of death, with comments necessary to a better understanding of the tables presented. Those desiring to study this subject more in detail should consult the registration reports. In these reports will be found the mortality record of every town in the State.

The total number of deaths returned to the registrar of vital statistics for the year ending December 31, 1891, was 7,310. This is fifty-eight less than was returned for the year 1890, but six hundred and nineteen more than the average for the past eight years. This excess over the average for the years stated is not due wholly to an actual increase in the death-rate, but to a more complete registration than existed during the earlier years of the period embraced in the comparison. Nevertheless that there has been an actual increase in the death-rate during the past two years, from epidemic influenza, or "La Grippe," is a fact fully demonstrated by the records. In 1889 there were but four deaths from this malady; in 1890 there were ninety-four, and in 1891 *one hundred and forty-three*. This increase does not by any means represent the total mortality that should really be credited to this disease, inasmuch as it is accountable for increasing the mortality of other diseases, like pneumonia, bronchitis, etc.

TABLE No. 17.

Deaths and Death-rates from 1884 to 1891, inclusive.

YEARS.	Deaths registered.	Deaths to 1,000 of population.*
1884.....	6,194	16.26
1885.....	6,201	17.13
1886.....	6,426	17.61
1887.....	6,479	17.61
1888.....	6,854	18.48
1889.....	6,696	17.91
1890.....	7,368	19.56
1891.....	7,310	19.41
Average	6,691	.....

* Population estimated for all but census years.

Table No. 17 gives the number of deaths returned for each year from 1884 to 1891, inclusive, with percentage to each 1,000 of the population. We stated in our last report that a death-rate of 18 — possibly a fraction over — we believe to be the average per 1,000 of the population for New Hampshire, a rate probably as low as can be found in any State in the Union, and considerably below that of some of the States. By this we do not mean to assert that New Hampshire is naturally more healthful than some other States with a higher death-rate, for in the consideration of this subject, nationality, social conditions, occupations, environments,

and many other conditions must be taken into account. The average death-rate for Europe from 1865 to 1883 was 28.1 per 1,000 of the population; for Europe, excluding Russia, it was 25.8; and for Russia alone, 35.7. For Eastern Europe, 35.7; Central Europe, 28.3; Southern Europe, 25.6; Northwestern Europe, 20.5. Massachusetts for a period of thirty years ending in 1888, had a mortality rate of 19.48; Austria for thirteen years ending in 1883, 31.0; and for about the same period the death-rate of Greece was 20.8; Denmark, 19.7; Sweden, 18.9; Ireland, 17.8; and Norway, 17.2. In our own country those States which have a reliable system of registration have a death-rate ranging from about 18 to 20 per 1,000 of the population. We can, therefore, upon the basis of our mortality records safely assert that New Hampshire is as healthful a State as any in the Union.

Table No. 18 shows the number of deaths and the death-rate per 1,000 of the population, by counties, for the years 1884 to 1891, inclusive. The highest death-rate has usually been in Hillsborough county, while the lowest, as a rule, has been in Coös; but in 1891, the highest rate was in Strafford county, and the lowest in Sullivan. The death-rate for the year by counties is as follows: Rockingham, 19.95; Strafford, 21.04; Belknap, 19.29; Carroll, 18.81; Merrimack, 19.23; Hillsborough, 20.98; Cheshire, 16.29; Sullivan, 16.18; Grafton, 17.41; Coös, 19.77.

The rate for the entire State is 19.41 per 1,000 of the population.

TABLE No. 18.

*Deaths and Death-rates, by Counties, from 1884 to 1891, inclusive.**

COUNTIES.	1884.		1885.		1886.		1887.		1888.		1889.		1890.		1891.	
	Deaths.	Death-rates.	Deaths.	Death-rates.	Deaths.	Death-rates.	Deaths.	Death-rates.	Deaths.	Death-rates.	Deaths.	Death-rates.	Deaths.	Death-rates.	Deaths.	Death-rates.
Rockingham	873	17.69	911	18.43	963	19.46	876	17.67	896	18.05	875	17.61	1,065	21.45	991	19.95
Stafford ..	627	17.07	619	16.73	609	16.33	673	17.91	688	18.17	691	18.11	801	20.83	809	21.04
Belknap	285	15.09	289	15.12	302	18.71	369	18.84	392	19.78	389	19.40	374	18.40	392	19.29
Carroll	333	18.31	269	14.80	303	16.68	294	16.20	328	18.08	298	16.44	363	16.71	341	18.81
Merrimack	736	15.48	796	16.63	833	17.29	835	17.22	920	18.86	891	18.15	983	19.88	951	19.23
Hillsborough	1,655	20.02	1,701	20.15	1,681	19.51	1,697	19.38	1,846	20.59	1,740	19.04	1,973	21.14	1,957	20.98
Cheshire	497	17.06	494	16.90	475	16.19	482	16.39	488	16.52	525	17.72	557	18.49	482	16.29
Sullivan	273	15.32	284	16.02	328	18.59	283	16.12	327	18.72	314	18.06	332	19.81	280	16.18
Grafton	652	17.06	611	16.05	616	16.24	602	15.93	655	17.35	625	16.67	651	17.49	618	17.41
Coös	263	12.88	227	10.87	256	12.00	368	16.89	314	14.11	348	15.32	329	14.17	459	19.77
Total	6,194	17.26	6,201	17.13	6,426	17.61	6,479	17.61	6,854	18.48	6,696	17.91	7,368	19.56	7,310	19.41

* Population estimated for all but census years.

TABLE No. 19.

*Percentages of Deaths, by Quarters, from 1884 to 1891, inclusive.**

YEARS.	PERCENTAGES OF DEATHS FOR QUARTERS ENDING WITH			
	March.	June.	September.	December.
1884	23.23	23.40	26.63	26.74
1885	27.27	26.66	24.32	21.75
1886	23.75	23.27	28.90	24.08
1887	24.56	24.02	27.77	23.65
1888	25.94	23.72	26.82	23.52
1889	23.70	24.16	27.38	24.76
1890	28.82	21.63	26.71	22.84
1891	22.36	24.15	26.89	26.58

* Not including deaths with month not stated, premature and still births.

Table No. 19 shows the percentages of deaths, by quarters, from 1884 to 1891, inclusive. It will be noticed that the greatest mortality usually occurs during the quarter ending with September, while for the other three quarters it is more nearly uniform. The increased rate recorded for the third quarter of the year is doubtless due to cholera infantum, which is most prevalent during July, August, and September.

The rate for the first quarter for the year 1891 is 22.36 of the total monthly; for the second quarter, 24.15; third quarter, 26.89; fourth quarter, 26.58.

TABLE No. 20.

Mortality of Males and Females compared, 1884 to 1891, inclusive.

YEARS.	Male decedents.	Female decedents.	Male decedents to 100 female decedents.	Death-rate of males to 1,000 male population.	Death-rate of females to 1,000 of female population.
1884.....	3,034	3,122	97.18	17.79	17.69
1885.....	2,948	3,194	92.29	17.28	18.09
1886.....	3,155	3,212	98.20	18.50	18.20
1887.....	3,174	3,267	97.15	18.61	18.51
1888.....	3,419	3,382	101.09	20.04	19.16
1889.....	3,253	3,389	59.88	19.07	19.20
1890.....	3,692	3,624	101.87	21.65	20.53
1891.....	3,557	3,453	102.72	19.60	17.65
Average	3,279	3,330	98.31	19.07	18.63

Table No. 20 exhibits the mortality of males and females compared for the years 1884 to 1891, inclusive. With the exception of the years 1888, 1890, and 1891, the female decedents have exceeded the males. By a comparison of the death-rates of the respective sexes to each 1,000 of the living population of that sex, it will be seen that the average mortality rate of the male population is slightly higher than that of the female.

In 1891, 3,557 male decedents and 3,453 female decedents were reported.

The death-rate of males to each 1,000 of the male population was 19.07. The death-rate of females to each 1,000 of the female population was 18.65.

TABLE No. 21.

*Deaths at Age Periods, by Percentages, from 1883 to 1891, inclusive.**

YEARS.	Under 1.	1 to 5.	5 to 10.	10 to 20.	20 to 30.	30 to 40.	40 to 50.	50 to 60.	Over 60.
1883	14.13	7.58	2.56	5.55	8.58	6.73	6.22	7.64	37.93
1884	16.22	7.36	2.61	5.30	7.93	6.26	6.33	7.75	38.38
1885	15.98	7.14	2.11	4.42	7.50	6.71	6.71	7.76	40.09
1886	16.89	7.70	2.86	4.82	7.73	6.55	6.12	7.47	38.86
1887	17.64	7.26	2.05	4.89	6.96	6.25	6.56	7.72	39.70
1888	19.23	7.63	2.04	4.93	7.07	6.00	5.53	7.57	38.72
1889	19.44	7.71	2.66	4.64	6.56	6.15	5.93	7.63	38.40
1890	16.23	6.67	1.99	4.28	7.04	2.12	6.62	9.17	40.49
1891	18.30	7.08	2.55	4.40	6.95	6.01	6.29	8.15	40.25

* Not including those with age not stated, premature and still births.

Table No. 21 shows the deaths at age periods by percentages from 1883 to 1891, inclusive.

This table is interesting in showing how uniformly the percentages are maintained for a certain age period from year to year, thus giving one of many proofs that the factors which bear upon the mortality of a State are governed by well defined laws.

TABLE No. 22.

*Deaths at Different Periods, compared with the number Living at the Same Period, 1891.**

	Deaths, 1891.	Persons living at same ages, census of 1880.	Death-rate per 1,000.
Under 1 year	1,264	6,141	205.82
Under 5 years	1,753	30,573	57.34
20 to 30 years	480	63,252	7.71
All others	4,791	253,166	18.90
All ages	7,024	376,530 †	18.65

* Excluding still births and premature births.

† Census of 1890.

Table No. 22 exhibits the number of deaths at different age periods compared with the number living at the same period, based upon the census of 1880, with the exception noted in the table. This table shows a death-rate per 1,000 of the population under one year of age, of 205.82 as against 186.61 for the preceding year; and under five years of age, 57.34 as against 52.79 for 1890; between twenty and thirty, 7.71 in 1891, and 7.77 in 1890, practically the same; all others, 18.90 in 1891, and 19.74 in 1890; for all ages the rate was 18.65 in 1891, and 18.87 the preceding year.

The difference in the death-rate between table No. 17 (19.41) and that of table No. 22 (18.65) is due to the exclusion of still births and premature births from the latter, while the former includes both.

TABLE No. 23.
Deaths by Ages and Sex, from 1884 to 1891, inclusive.*

YEARS.	Under 1.	1 to 5.	5 to 10.	10 to 20.	20 to 30.	30 to 40.	40 to 50.	50 to 60.	60 to 70.	70 to 80.	80 to 90.	90 to 100.	Over 100.	Unknown.
1884. Males	460	243	72	136	224	168	180	245	322	502	292	30	1	60
Females	353	212	90	192	266	220	211	235	336	444	379	70	...	51
Not stated	3	1	...	...	1	...	1	...	1	...	...	...	...	4
Total	816	456	162	328	491	388	392	480	659	946	671	100	1	115
1885. Males	416	225	62	109	190	181	190	252	394	478	284	32	1	43
Females	371	217	68	164	275	235	226	225	355	463	398	74	2	50
Not stated	18	1	1	1	...	...	...	4	2	3	...	...	...	5
Total	805	443	131	274	465	416	416	481	751	944	682	106	3	98
1886. Males	487	273	94	132	205	188	198	228	368	499	317	42	2	33
Females	385	221	90	178	292	233	195	252	339	447	397	83	3	28
Not stated	19	1	...	...	...	...	...	...	...	...	...	...	...	3
Total	891	495	184	310	497	421	393	480	707	946	714	125	5	64
1887. Males	490	231	71	142	196	184	186	254	377	512	336	45	1	34
Females	416	239	61	175	255	221	239	246	358	494	350	93	6	28
Not stated	8	1	...	...	...	...	...	...	...	...	...	...	...	1
Total	914	470	133	317	451	405	425	500	735	1,006	686	138	7	63

* Excluding still births and premature births.

TABLE No. 23. — *Continued.**
Deaths by Ages and Sex, from 1884 to 1891, inclusive.

YEARS.	Under 1.	1 to 5.	5 to 10.	10 to 20.	20 to 30.	30 to 40.	40 to 50.	50 to 60.	60 to 70.	70 to 80.	80 to 90.	90 to 100.	Over 100.	Unknown.
1888..Males.....	588	280	75	144	213	177	180	257	392	507	377	47	1	53
Females	459	243	65	194	271	241	199	262	375	511	360	79	5	21
Not stated	13	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	1
Total	1,060	523	140	338	484	418	379	519	767	1,018	737	126	6	87
1889..Males.....	536	269	90	131	187	186	175	241	381	492	342	43	..	29
Females	470	245	88	179	251	226	222	270	398	471	366	75	3	29
Not stated	8	2	.....	1	1	.....	.....	.....	.....	.....	.....	.....	.....	1
Total	1,014	516	178	311	439	412	397	511	779	963	708	118	3	59
1890..Males.....	609	250	73	143	229	242	220	308	422	576	368	52	..	59
Females	524	216	66	156	263	277	242	332	399	513	406	86	5	44
Not stated	13	2	.....	.....	.....	.....	.....	.....	.....	1	.....	.....	.....	10
Total	1,146	468	139	299	492	519	462	640	821	1,090	774	138	5	113
1891..Males.....	703	256	86	134	248	206	210	279	438	530	346	52	..	69
Females	551	231	90	170	232	208	225	284	395	507	412	97	3	48
Not stated	10	2	.....	.....	.....	1	.....	.....	.....	.....	.....	.....	.....	1
Total	1,264	489	176	304	480	415	435	563	833	1,037	758	149	3	118

* Excluding still births and premature births.

Table No. 23 shows the number of deaths at different age periods by sex, from 1885 to 1891, inclusive. In the year 1891 there were returned 1,226 deaths of children under one year of age, not including still births and premature births; 489 between one and five; 176 between five and ten; 304 between ten and twenty; 480 between twenty and thirty; 415 between thirty and forty; 435 between forty and fifty; 563 between fifty and sixty; 833 between sixty and seventy; 1,037 between seventy and eighty; 758 between eighty and ninety; 149 between ninety and one hundred; 3 over one hundred; and 118 with age not stated.

Compared with previous years it will be seen that there has been almost an alarming increase of deaths in children under one year of age, which is largely accounted for by an increase of deaths from diarrheal diseases, chiefly cholera infantum. The variation in some of the other age periods though considerable is not so marked as in the instance referred to.

Table No. 24 shows the percentages of deaths, by age periods and sex, to the total mortality from 1884 to 1891, inclusive. Tables Nos. 23 and 24 are interesting and instructive inasmuch as they give the number of deaths and the percentage to the total mortality by age periods, for the seven years embraced in the tables. There are no other tables that so emphatically exhibit the large mortality that annually occurs among children under one year of age. It will be seen that nearly one fourth of all the deaths in the State for the year 1891 were of children under five years of age. This excessive mortality among the young offers a subject for reflection and study for those who are interested or engaged in efforts to reduce the mortality rate of the State. It is admitted by those who have given the subject any attention that so large a death-rate among children is preventable, and that the means are at the command of the individual and the public to reduce these figures very materially. This view is emphatically corroborated by a detailed exhibit of the causes of death among children.

TABLE No. 24.

*Percentages of Deaths by Ages and Sex to Total Mortality, from 1884 to 1891, inclusive.**

YEARS.	YEARS.												
	Under 1.	1 to 5.	5 to 10.	10 to 20.	20 to 30.	30 to 40.	40 to 50.	50 to 60.	60 to 70.	70 to 80.	80 to 90.	90 to 100.	Over 100.
1884. Males	16.00	8.45	2.51	4.73	7.79	5.84	6.26	8.52	11.20	17.46	10.16	1.04	.04
Females	11.74	7.05	2.99	6.38	8.84	7.31	7.02	7.81	11.17	14.76	12.60	2.33	...
Total	13.82	7.73	2.75	5.57	8.33	6.60	6.65	8.16	11.18	16.08	11.41	1.70	.02
1885. Males	14.78	8.00	2.20	3.87	6.75	6.43	6.75	8.96	14.00	16.99	10.09	1.14	.04
Females	12.07	7.06	2.21	5.34	8.95	7.65	7.35	7.32	11.55	15.07	12.95	2.41	.07
Total	13.37	7.51	2.21	4.64	7.95	7.07	7.07	8.10	12.72	15.98	11.58	1.80	.05
1886. Males	16.06	9.00	3.10	4.35	6.75	6.20	6.53	7.52	12.13	16.45	10.45	1.39	.07
Females	12.36	7.10	2.89	5.71	9.37	7.48	6.26	8.09	10.88	14.35	12.74	2.67	.10
Total	14.18	8.04	2.99	5.04	8.08	6.85	6.39	7.81	11.50	15.39	11.62	2.03	.08
1887. Males	16.20	7.64	2.35	4.69	6.48	6.08	6.15	8.40	12.46	16.92	11.11	1.49	.03
Females	13.19	7.58	1.94	5.55	8.09	7.01	7.58	7.80	11.35	15.67	11.10	2.95	.19
Total ..	14.67	7.61	2.14	5.13	7.30	6.56	6.88	8.09	11.90	16.28	11.10	2.23	.11
1888. Males	18.16	8.65	2.31	4.45	6.58	5.47	5.56	7.94	12.10	15.66	11.64	1.45	.03
Females	14.06	7.45	1.99	5.94	8.30	7.38	6.10	8.03	11.49	15.66	11.03	2.42	.15
Total	16.10	8.04	2.15	5.20	7.44	6.43	5.83	7.98	11.80	15.66	11.34	1.94	.09

1889.. Males	17.44	8.75	2.93	4.26	6.09	6.05	5.70	7.84	12.40	16.01	11.13	1.40	...
Females	14.40	7.51	2.70	5.48	7.69	6.92	6.80	8.27	12.20	14.43	11.21	2.30	.09
Total	15.88	8.11	2.81	4.89	6.91	6.50	6.27	8.06	12.29	15.20	11.17	1.86	.05
1890.. Males	17.44	7.15	2.09	4.09	6.55	6.93	6.30	8.82	12.08	16.49	10.54	1.49	...
Females	15.03	6.19	1.89	4.47	7.54	7.94	6.94	9.52	11.45	14.72	11.65	2.46	.14
Total	16.23	6.67	1.99	4.28	7.04	7.43	6.62	9.17	11.76	15.60	11.09	1.97	.07
1891.. Males	20.15	7.34	2.47	3.84	7.11	5.91	6.02	8.00	12.56	15.15	9.92	1.49	...
Females	16.18	6.78	2.61	4.99	6.81	6.11	6.61	8.34	11.60	14.88	12.09	2.85	.08
Total	18.19	7.06	2.55	4.41	6.96	6.01	6.31	8.16	12.08	15.04	10.99	2.16	.04

* Excluding those with age and sex not stated, and premature and still births.

TABLE No. 25.

*Deaths of Children under Five Years of Age, by Seasons, 1891.**

	January.	February.	March.	April.	May.	June.	July.	August.	September.	October.	November.	December.
Months	102	103	104	107	94	113	205	298	224	160	89	143
Quarters	309			314			727			392		
Percentages	17.73			18.02			41.72			22.51		
Half-years	623					1,119						
Percentages	35.76					64.24						
Total deaths.						1,742						

* Not including deaths with month not stated.

This table represents the mortality of children under five years of age, by seasons, for the year 1891. The greatest mortality of the year occurred in the quarter embracing the months of July, August, and September, and was 41.72 per cent of the total mortality among children, as against 17.73 per cent for the first quarter, 18.02 per cent for the second, and 22.51 per cent for the last quarter of the year. There were 1,742 deaths among children under five years of age during the year, or 128 more than were recorded in 1890.

For the latter year the percentages were as follows: First quarter, 19.95; second quarter, 15.92; third quarter, 44.23; last quarter, 19.88. •

TABLE No. 26.

*Total Deaths by Seasons, 1891.**

	January.	February.	March.	April.	May.	June.	July.	August.	September.	October.	November.	December.
Months	533	466	565	538	604	547	579	680	622	563	496	800
Quarters	1,564				1,689				1,881		1,859	
Percentages	22.37				24.15				26.89		26.58	
Half-years			3,253						3,740			
Percentages			46.52						53.48			
Total deaths.					6,993							

* Not including deaths with month not stated, premature and still births.

This table gives the total number of deaths at all ages, by seasons, for the year 1891. There was a total of 6,993 deaths, not including those with month not stated, premature and still births. The greatest mortality was in the month of December, 800, and the least in February, 466. The percentages, by quarters, were as follows: First quarter, 22.37; second quarter, 24.15; third quarter, 26.89; last quarter, 26.58.

The percentage for the first half of the year was 46.52; for the last half, 53.48.

TABLE No. 27.

Nativity of Persons Deceased for 1891, by Counties.

COUNTIES.	Total deaths.*	NATIVE-BORN.		FOREIGN-BORN.	
		Deaths.	Percentages.	Deaths.	Percentages.
Rockingham	991	784	89.49	92	10.50
Strafford.....	809	644	85.08	113	14.92
Belknap	392	286	92.25	24	7.74
Carroll	341	293	96.69	10	3.80
Merrimack.....	951	788	89.24	95	10.75
Hillsborough ..	1,957	1,373	78.63	373	21.36
Cheshire	482	390	89.24	47	10.75
Sullivan	280	229	92.71	18	7.28
Grafton.....	648	539	93.90	35	6.09
Coös.....	459	311	81.41	71	18.58
Total	7,310	5,637	86.52	878	13.47

* Including those whose nativity was not recorded. In the calculations of percentages, the rates are not given to the *total* reported deaths, but only to the total of those cases where the nativity was stated.

This table gives the nativity of the decedents for the year 1891, together with the percentages of each, by counties. The greatest number of foreign-born decedents, as well as the highest rate, was in Hillsborough county, where there is a larger foreign-born population, being 373 or 21.36 per cent; Coös follows with 18.58; Strafford, 14.92; Merrimack and Cheshire, 10.75 each; Rockingham, 10.50; Belknap, 7.74; Sullivan, 7.28;

Grafton, 6.09; Carroll, 3.30. The total foreign-born decedents for the State were 878, a rate of 13.47. The rate for the preceding year was 13.55.

TABLE No. 28.

Nativity of Persons Deceased from 1884 to 1891, inclusive.

YEARS.	Total deaths.*	NATIVE-BORN.		FOREIGN-BORN.	
		Deaths.	Percentages.	Deaths.	Percentages.
1884.....	6,194	4,868	89.01	601	10.99
1885.....	6,201	4,847	89.35	578	10.65
1886.....	6,426	4,989	88.52	647	11.48
1887.....	6,479	5,131	88.03	698	11.97
1888.....	6,854	5,449	87.53	776	12.47
1889.....	6,696	5,383	88.00	731	12.00
1890.....	7,368	5,672	86.45	889	13.55
1891.....	7,310	5,637	86.52	878	13.47

* Including those whose nativity was not recorded. In the calculations of percentages, the ratios are not given to the *total* reported deaths, but only to the total of those cases where the nativity was stated.

Table No. 28 shows the number of native and foreign-born decedents in the State for each year from 1884 to 1891, inclusive, with percentages of each.

Of a total of 7,310 deaths in the State returned for the year 1891, 5,637, or 86.52 per cent, were native-born, and 878, or 13.47 per cent, foreign-born.

TABLE No. 29.
Deaths in 1891 of Persons Aged One Hundred Years, or more.

Date of death.	NAME.	AGE.			Place of death.	Birthplace.	Single, married, or widowed.
		Years.	Months.	Days.			
June 26	Betsey Graves Wam	101	...	2	Walpole	Walpole	Widow.
July 22.....	Ellen Scott.....	104	.....	.....	Portsmouth...	Ireland.....	Widow.
September 11	Elizabeth Kidder	102	1	14	Stewartstown.	New Hampshire..	Widow.

CAUSES OF DEATH.

There were returned for the year 1891, 7,310 deaths, of which 3,717 were males, 3,544 females, and 49 with sex not stated. In 353 cases the cause of death was not specified.

TABLE No. 30.

Causes of Death, by Classes, from 1884 to 1891, inclusive.

	1884.	1885.	1886.	1887.	1888.	1889.	1890.	1891.
I. — Zymotic diseases...	907	890	1,095	1,073	1,097	1,172	1,155	1,301
II. — Constitutional diseases.....	1,276	1,271	1,284	1,222	1,200	1,114	1,309	1,095
III. — Local diseases.....	2,594	2,637	2,610	2,731	2,994	2,852	3,146	3,149
IV. — Developmental diseases.....	857	848	948	952	1,016	1,041	1,150	1,141
V. — Violent deaths....	201	225	206	218	234	233	271	271

This table gives the causes of deaths, by classes, for the years 1884 to 1891, inclusive.

There were attributed to the zymotic diseases 1,301 deaths; constitutional diseases, 1,095; local diseases, 3,149; developmental diseases, 1,141; and to violent deaths, 271. There was a marked increase of deaths in the zymotic class over the number reported in 1890. Under constitutional diseases there were returned 204 less than for the preceding year. Under the other classes the variation was small. In class five, violent deaths, there is remarkable uniformity from year to year.

TABLE No. 31.

*Percentage of Causes of Death, by Classes, from 1884 to 1891, inclusive.**

YEARS.	CLASSES.				
	Zymotic.	Constitutional.	Local.	Developmental.	Violent deaths.
1884	15.9	22.4	45.7	12.3	3.5
1885	13.9	22.2	46.0	12.2	3.6
1886	18.2	21.4	43.4	13.4	3.4
1887	17.9	20.4	45.7	12.1	3.6
1888	17.4	19.1	47.6	12.0	3.7
1889	19.1	18.2	46.5	12.3	3.8
1890	17.0	19.3	46.5	13.1	4.0
1891	19.5	16.4	47.2	12.8	4.0

* Excluding deaths from unspecified causes, premature and still births.

Table No. 31 gives the percentages of causes of death, by classes, excluding deaths from unspecified causes, premature and still births, from the year 1884 to 1891, inclusive. This table presents substantially the same information as table No. 30, but in the form of percentages. The relative fatality of each class of diseases is vividly shown. The increase of the percentage of deaths from zymotic diseases during the period included in the table as well as the decrease of constitutional diseases, is especially noticeable.

TABLE No. 32.
Causes of Death, by Classes and Counties, 1891.

COUNTIES.	Zymotic.		Constitutional.		Local.		Develop- mental.		Violent.		Unspecified.		Total.
	Number.	Percentages.	Number.	Percentages.	Number.	Percentages.	Number.	Percentages.	Number.	Percentages.	Number.	Percentages.	
Rockingham.....	165	16.65	136	13.72	446	45.01	152	15.34	36	3.63	56	5.65	991
Strafford	155	19.16	133	16.44	310	38.31	137	16.93	36	4.45	38	4.70	809
Belknap	90	22.96	64	16.33	166	42.35	58	14.79	6	1.53	8	2.04	392
Carroll	36	10.55	49	14.37	173	50.73	55	16.13	16	4.69	12	3.52	341
Merrimack	145	15.25	155	16.30	436	45.85	161	16.93	34	3.57	20	2.10	951
Hillsborough	377	19.26	298	15.23	766	39.14	309	15.79	49	2.50	158	8.07	1,937
Cheshire	68	14.11	82	17.01	223	46.27	66	13.69	26	5.39	17	3.53	482
Sullivan	34	12.14	41	14.64	146	52.14	47	16.79	9	3.21	3	1.07	280
Grafton	108	16.66	96	14.81	300	46.29	100	15.43	30	4.63	14	2.16	648
Coös	123	26.79	41	8.93	183	39.87	56	12.20	29	6.32	27	5.88	459
Total	1,301	17.79	1,095	14.98	3,149	43.08	1,141	15.61	271	3.71	353	4.83	7,310

Table No. 32 gives the causes of death, by classes and counties, for 1891, with the percentages of each to the total number of deaths, and including deaths from unspecified causes, premature and still births, which accounts for the differences in the percentages in tables Nos. 31 and 32; the former gives the percentage of each class to the total number of specified causes, excluding premature and still births, while the latter gives the percentage of each class to the total number of all classes. The highest percentage in the zymotic class is in Coös county, 26.79; Belknap, 22.96; Hillsborough, 19.26; Strafford, 19.16; Grafton, 16.66; Rockingham, 16.65; Merrimack, 15.25; Cheshire, 14.11; Sullivan, 12.14; and the lowest in Carroll county, 10.55. The percentage of deaths in this class for the entire State was 17.79 to the total mortality, as against 15.67 for 1890.

The percentages in the class of constitutional diseases do not vary so much in the different counties, the highest rate being 17.01 in Cheshire county, followed by 16.44 in Strafford, 16.33 in Belknap, 16.30 in Merrimack, 15.23 in Hillsborough, 14.81 in Grafton, 14.64 in Sullivan, 14.37 in Carroll, 13.72 in Rockingham, and the lowest, 8.93, in Coös. The percentage of this class for the whole State was 17.76 in 1890, and 16.63 the previous year.

In the class of local diseases the highest rate was in Sullivan, 52.14; Carroll, 50.73; Grafton, 46.29; Cheshire, 46.27; Merrimack, 45.85; Rockingham, 45.01; Belknap, 42.35; Coös, 39.87; Hillsborough, 39.14; Strafford, 38.31. The rate for the State in this class was 43.08.

In the developmental class the rate for the State was 15.61. The variations in the percentages by counties are much less than in the other classes, the highest being 16.93, in Strafford and Merrimack counties, and the lowest, 12.20, in Coös.

There were 271 deaths from violent causes, and 353 from unspecified causes.

TABLE No. 33.

Mortality from Prominent Zymotic Diseases from 1884 to 1891, inclusive.

YEARS.	DISEASES.											
	Cholera infantum.	Croup.	Diarrhea.	Diphtheria.	Dysentery.	Erysipelas.	Fever, cerebro-spinal.	Fever, typhoid.*	Measles.	Pertussis.	Scarlatina.	Septicæmia.
1884	266	49	53	110	80	19	25	137	3	14	52	27
1885	219	74	59	78	40	25	20	136	45	25	53	38
1886	362	64	38	156	79	18	26	194	18	26	21	27
1887	336	84	38	177	53	20	34	134	39	21	26	30
1888	370	94	50	103	63	36	34	150	55	23	34	29
1889	353	88	68	210	67	27	25	161	16	47	18	29
1890	399	64	50	164	48	29	...	143	9	26	16	57
1891	486	56	46	160	51	43	...	170	19	27	13	38
Average	349	72	50	145	60	27	21	153	26	26	29	34
												992

* Including fever, bilious, intermittent, malarial, and typho-malarial fevers.

Table No. 33 exhibits the mortality from prominent zymotic diseases. Cholera infantum was the cause of more than one third of all the deaths of this class, 486 in a total of 1,109, and 87 more than were returned in 1890. The increase of the number of deaths from this disease during the period embraced in the table is especially noticeable.

Typhoid fever shows an increase in number of decedents over those returned for the preceding four years. Croup, diphtheria, diarrhea, scarlet fever, and septicæmia show a falling off from the numbers reported for 1890; dysentery, measles, and whooping cough a slight increase.

The average mortality from the zymotic diseases for the past eight years is 992 as against 1,109 for 1891.

TABLE No. 34.

Mortality from Principal Constitutional Diseases from 1884 to 1891, inclusive.

YEARS.	DISEASES.									
	Dropsy.	Anæmia.	Cancer.	Mortification.	Rheumatism.	Scrofula.	Tabes mesenterica.	Phthisis (pulmonary).	Hydrocephalus.	Tubercular meningitis.
1884	80	43	213	18	26	26	4	865	27	*
1885	90	32	212	24	28	22	2	857	25	*
1886	83	28	206	27	47	16	11	809	33	19
1887	79	17	218	29	47	16	7	766	23	16
1888	75	34	203	22	43	21	14	742	30	13
1889	62	40	213	21	43	22	13	651	21	24
1890	53	28	276	33	30	15	6	825	13	30
1891	41	41	213	2	24	11	19	695	22	15
Average	70	33	219	22	36	19	9	776	24	15

* Not classed separately.

The mortality from the chief constitutional diseases from 1884 to 1891, inclusive, is shown in table No. 34. Phthisis, as always, stands at the head, numerically, as the cause of death. There were recorded in 1891, 695 deaths from this disease, 120 less than were returned the preceding year. A close study of this and other tables indicates that the mortality from phthisis is being somewhat reduced in New Hampshire.

There was a falling off of 63 deaths from cancer from the number returned in 1890, the mortality for 1891 being 213. The annual uniformity of the number of decedents from this disease is striking.

TABLE No. 35.

Mortality from Principal Local Diseases from 1884 to 1891, inclusive.

YEARS.	DISEASES.												
	Apoplexy.	Paralysis.	Convulsions.	Cephalitis.*	Brain disease.	Heart disease.	Bronchitis.	Pneumonia.	Enteritis.	Gastritis.	Peritonitis.	Liver disease.	Bright's disease, nephritis, and other kidney diseases.
1884	192	248	99	120	134	507	78	436	69	44	61	63	140
1885	206	278	93	133	122	489	112	504	57	49	44	63	157
1886	220	249	71	141	127	510	81	466	53	66	48	71	143
1887	210	253	64	117	121	552	114	556	57	54	48	69	163
1888	243	273	88	143	112	575	142	628	39	51	63	72	154
1889	259	196	76	151	126	564	127	582	56	42	57	56	200
1890	263	251	65	186	140	568	194	703	63	60	51	56	201
1891	283	241	78	161	130	572	180	673	73	47	68	55	182
Average	234	249	79	144	126	542	128	568	58	52	55	63	167
													2,475

* Meningitis and cerebritis included.

Table No. 35 gives the mortality from the principal local diseases from 1884 to 1891, inclusive. The annual average for the eight years is 2,475, the total for 1891 being 2,743.

Pneumonia is the predominating disease in this class. The number of deaths returned from this cause in 1891 was 673, 30 less than was reported for the preceding year.

Next in order of fatality comes heart disease with 572 deaths for the year 1891; then follows apoplexy with

283 deaths ; paralysis, 241 ; Bright's disease, 182 ; bronchitis, 180 ; cephalitis, 161 ; brain disease, 130 ; convulsions, 78 ; enteritis, 73 ; peritonitis, 68 ; liver disease, 55 ; and gastritis, 47.

TABLE No. 36.

Mortality from Principal Developmental Diseases from 1884 to 1891, inclusive.

YEARS.	DISEASES.									
	Still-born.	Debility, infantile.	Debility, premature birth.	Malformation.	Teething.	Innutrition.	Childbirth.	Old age.	Atrophy and debility.	Total.
1884	156	*	35	13	19	*	27	457	144	851
1885	145	*	39	13	13	*	31	420	167	828
1886	140	68	54	12	16	50	30	468	98	936
1887	166	56	63	10	20	76	27	449	78	945
1888	189	91	69	19	20	81	20	407	112	1,008
1889	220	79	68	24	18	63	27	426	104	1,029
1890	197	113	65	11	15	95	28	410	204	1,138
1891	213	104	73	18	14	90	23	385	208	1,128
Average....	178	65	58	15	17	57	27	428	139	983

* Classed with atrophy and debility.

Table No. 36 shows the mortality from the principal developmental diseases for the eight years given.

The variations in this class from year to year are not especially marked.

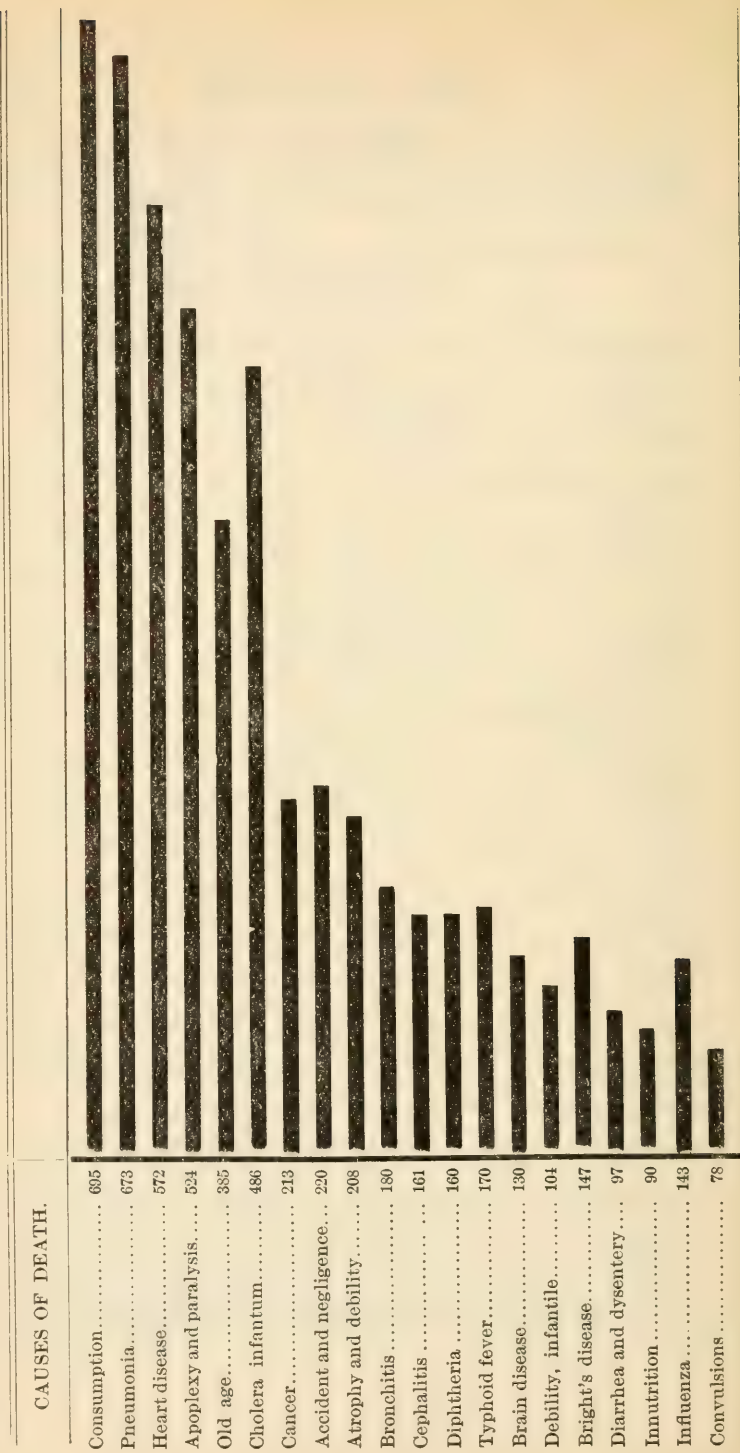
TABLE No. 37.

Mortality from Twenty Prominent Causes from 1884 to 1891, inclusive.

CAUSES OF DEATH.	Deaths in 1891.	ORDER OF FATALITY.							
		1891.	1890.	1889.	1888.	1887.	1886.	1885.	1884.
Consumption.....	695	1	1	1	1	1	1	1	1
Pneumonia	673	2	2	2	2	3	5	2	5
Heart disease	572	3	3	3	3	2	2	4	2
Apoplexy and paralysis..	524	4	4	4	4	4	3	3	4
Old age	385	6	5	5	5	5	4	5	3
Cholera infantum	486	5	6	6	6	6	6	6	6
Cancer	213	8	7	7	7	7	7	7	7
Diphtheria.....	160	13	12	8	15	9	10	18	13
Accident and negligence.	220	7	8	9	8	8	9	8	11
Typhoid fever *	170	11	13	10	9	10	8	9	10
Cephalitis †	161	12	11	11	10	12	11	10	12
Diarrhea and dysentery .	97	18	17	12	12	14	13	15	9
Bright's disease	147	14	16	13	20	15	15	14	14
Bronchitis	180	10	10	14	11	13	17	12	17
Brain disease	130	16	14	15	13	11	12	11	8
Atrophy and debility ...	208	9	9	16	14	18	14	13	18
Croup	56	21	21	17	16	16	21	19	22
Debility, infantile	104	17	15	18	17	23	22	‡	....
Convulsions.....	78	20	20	19	18	21	19	16	15
Innutation	90	19	18	20	19	19	23	‡	...
Influenza	143	15	19	....	....	....	....	....	....

* Fever, bilious fever, malarial, intermittent, and typho-malarial fevers included. † Meningitis and cerebritis included. ‡ Classed with atrophy and debility.

DIAGRAM No. 1.—SHOWING THE COMPARATIVE MORTALITY, BY ABSOLUTE NUMBER OF DECEDENTS, FROM TWENTY PROMINENT CAUSES OF DEATH DURING YEAR ENDING DECEMBER 31, 1891.



CONSUMPTION.

Table No. 37 gives a comparative view of the mortality from twenty prominent causes of death from 1884 to 1891, inclusive. This table together with the diagram that follows is interesting in studying the relative positions of the more prominent causes of death, from year to year. Consumption, as it always has done, heads the list, and is responsible for more deaths than any other disease. The long black line at the head of the diagram is of appalling significance. There were returned in 1891, 695 deaths from this disease. Next in order comes pneumonia. This disease has stood second among the causes of mortality in this State for the past four years. In 1887 it was third, and in 1886 and 1884 it was fifth in the order of fatality. Heart disease ranks third in 1891, with a mortality of 572; apoplexy and paralysis fourth, with 524; cholera infantum went from the sixth position, which it has hitherto held, up to the fifth, with a mortality of 486; old age is sixth, with 385, a lower position than has been heretofore recorded; cancer decreased from the seventh position to the eighth, with a total of 213 deaths; diphtheria shows a mortality of 160 for 1891, and is thirteenth on the list; accident and negligence is seventh, with 220 deaths; typhoid fever is eleventh, with 170 deaths; cephalitis twelfth, with 161; Bright's disease fourteenth, with 147; atrophy and debility ninth, with 208; croup twenty-first, with 56; infantile debility seventeenth, with 104; convulsions twentieth, with 78; innutrition nineteenth, with 90; and influenza fifteenth, with 143. The relative positions of these diseases for the past eight years may be seen by studying table No. 37.

TABLE No. 38.

Mortality from Consumption from 1884 to 1891, inclusive.

YEARS.	Deaths.	Percentages of deaths to deaths from all causes.	Death-rate per 10,000 living population.
1884.....	865	14.01	24.18
1885.....	857	13.82	23.68
1886.....	809	12.58	22.17
1887.....	766	11.82	20.82
1888.....	742	10.82	20.01
1889.....	651	9.72	17.42
1890.....	825	11.19	21.91
1891.....	695	9.51	18.31
Totals.....	6,210	.....	.....

The mortality from consumption, the percentage of the same to the total mortality, and the rate per 10,000 of the population is shown in the above table, for the years 1884 to 1891, inclusive. It will be seen that there was a considerable diminution in the mortality from this disease between the years 1884 and 1889, but was largely increased in 1890; but in 1891 it again fell to nearly the lowest figures recorded during the past eight years. In commenting upon the returns of 1890 we said: We have entertained the belief that an increased knowledge of the nature of consumption and the measures necessary to restrict and prevent it may have had some influence in causing this reduction. The increased

mortality in 1890 does not weaken our opinion, and is to be accounted for, to a large extent if not wholly, by the climatic or other causes to which has been due epidemic influenza or la grippe. That this condition has been a very marked and important factor in causing the increased mortality from certain diseases, has already been shown; therefore we are disposed to attribute the large increase in the deaths from consumption in 1890, to the climatic conditions of this particular period. The great force of the epidemic of influenza which extended in 1891 seems to have been particularly fatal to consumptives in the preceding year, doubtless owing to the fact that a large number of persons well advanced in phthisis succumbed to the two diseases, leaving a far less number of consumptives unable to resist the conditions of 1891.

Table No. 39 shows the mortality from consumption, by counties, with percentages to total mortality, from 1884 to 1891, inclusive. Strafford county has the highest rate for 1891, 11.62; Belknap, 11.23; Cheshire, 10.16; Hillsborough, 10.06; Carroll, 9.38; Merrimack, 9.36; Grafton, 8.79; Rockingham, 8.57; Sullivan, 7.15; Coös, 6.10. The average for the State to the total mortality for 1891 was 9.51.

TABLE No. 39.
Mortality from Consumption, by Counties, with Percentages of Deaths to Total Mortality, from 1884 to 1891, inclusive.

COUNTIES.	1884.		1885.		1886.		1887.		1888.		1889.		1890.		1891.	
	Deaths.	Percentages.	Deaths.	Percentages.	Deaths.	Percentages.	Deaths.	Percentages.	Deaths.	Percentages.	Deaths.	Percentages.	Deaths.	Percentages.	Deaths.	Percentages.
Rockingham.....	130	14.89	134	14.70	142	14.74	130	14.84	96	10.71	88	10.05	134	12.58	85	8.57
Strafford.....	105	16.74	96	15.50	96	15.76	80	11.88	93	13.51	75	10.85	117	14.60	94	11.62
Belnap.....	54	18.94	50	17.30	37	10.22	48	13.00	46	11.73	42	10.79	40	10.69	44	11.23
Carroll.....	46	13.81	33	12.26	41	13.53	33	11.22	26	7.92	29	9.73	25	8.25	32	9.38
Merrinack.....	91	12.36	102	12.81	79	9.48	96	11.49	101	10.97	88	9.87	114	11.59	89	9.36
Hillsborough.....	229	13.83	233	13.69	218	12.96	179	10.55	209	11.32	168	9.64	204	10.33	197	10.06
Cheshire.....	62	12.47	75	15.18	60	12.63	50	10.37	47	9.63	53	10.09	51	9.15	49	10.16
Sullivan.....	36	13.18	36	12.67	45	13.72	32	11.30	36	11.00	28	8.91	32	9.63	20	7.15
Grafton.....	83	12.73	70	11.45	72	11.72	80	13.28	63	9.61	58	9.27	70	10.75	57	8.79
Coös.....	32	12.16	28	12.33	19	7.42	38	10.32	25	7.96	22	6.32	38	11.51	28	6.10
Total.....	868	14.01	857	13.82	809	12.58	766	11.82	742	10.82	651	9.72	825	11.19	695	9.51

The mortality from consumption in the cities of the State is shown in the following tables.

TABLE No. 40.

Deaths from Pulmonary Consumption, by Seasons, Ages, and Nativity, 1891, for the City of Manchester.

Months	January. 11	February. 9	March. 4	April. 11	May. 8	June. 9	July. 7	August. 6	September. 10	October. 5	November. 9	December. 9	Total.	American.	Foreign.	Not stated.
Quarters	24			28			23			23			98			
Ages.....	Under 10. 9	10 to 15. 4	15 to 20. 11	20 to 30. 28	30 to 40. 16	40 to 50. 19	50 to 60. 6	60 to 70. 2	70 to 80. 3	Over 80. Not stated.						
Nativity														46	44	8
Males.....														44		
Females.....														54		

Percentage to total mortality of city, 10.40.

Table No. 40 gives the deaths from consumption, by months, seasons, ages, and nativity, in the city of Manchester for 1891. Total number of deaths from this cause for the year was 98 as against 106 in 1890. Of these 44 were males and 54 females; 46 were American-born, 44 foreign-born, and 8 nativity not stated. The greatest fatality was in April and January, 11 each of those months; September, 10; February, June, November, and December, 9 each; May, 8; July, 7; August, 6; October, 5; March, 4.

Nine of the decedents were under 10 years of age; 4 between 10 and 15; 11 between 15 and 20; 28 between

20 and 30; 16 between 30 and 40; 19 between 40 and 50; 6 between 50 and 60; 2 between 60 and 70; and 3 over 70. The rate to the total mortality of the city was 10.40 per cent.

TABLE No. 41.

Deaths from Pulmonary Consumption, by Seasons, Ages, and Nativity, 1891, for the City of Concord.

Months	3 January.	3 February.	12 March.	1 April.	4 May.	4 June.	2 July.	3 August.	12 September.	4 October.	12 November.	12 December.	Total.	American.	Foreign.	Not stated.
Quarters	8			9			7			8			32			
Ages	Under 10.	10 to 15.	15 to 20.	20 to 30.	30 to 40.	40 to 50.	50 to 60.	60 to 70.	70 to 80.	Over 80.	Not stated.					
	1	1	5	7	9	4	2	3								
Nativity														26	5	1
Males													12			
Females													20			

Percentage to total mortality of city, 9.30.

Table No. 41 is a record of consumption in the city of Concord for the year 1891. There were 32 deaths from this disease — 12 males and 20 females; 26 American-born, 5 foreign-born, and 1 with nativity not stated. The mortality by months was as follows: May, June, and October, 4 each; January, February, and August, 3 each; March, July, November, and December, 2 each; in April, 1. One decedent was under 1 year of age; 1 between 10 and 15; 5 between 15 and 20; 7 between 20 and 30; 9 between 30 and 40; 4 between 40 and 50; 2 between 50 and 60; 3 between 60 and 70.

TABLE No. 42.

*Deaths from Pulmonary Consumption, by Seasons, Ages, and Nativity,
1891, for the City of Nashua.*

Months	January. 6	February. 3	March. 12	April. 3	May. 7	June. 5	July. 1	August. 4	September. 4	October. 4	November. 3	December. 12	Total.	American.	Foreign.	Not stated.
Quarters	11			15			5			9			*42			
Ages....	Under 10. 3	10 to 15. 2	15 to 20. 3	20 to 30. 10	30 to 40. 9	40 to 50. 7	50 to 60. 2	60 to 70. 1	70 to 80. 0	Over 80. 0	Not stated. 5					
Nativity														18	20	4
Males													20			
Females													22			

Percentage to total mortality of city, 10.29.

* Month not stated, 2.

This table is a record of the same disease in the city of Nashua for the year 1891, the total number being 42 — 20 males and 22 females; 18 American-born, 20 foreign-born, and 4 not stated. Seven died in May; 6 in January; 5 in June; 4 each in September and October; 3 each in February, April, and November; 2 each in March and December; and 1 in July. Three of the decedents were under 10 years of age; 2 between 10 and 15; 3 between 15 and 20; 10 between 20 and 30; 9 between 30 and 40; 7 between 40 and 50; 2 between 50 and 60; 1 over 60; and 5 age not stated.

TABLE No. 43.

Deaths from Pulmonary Consumption, by Seasons, Ages, and Nativity, 1891, for the City of Portsmouth.

Months	January. 1	February. 2	March. 1	April. 3	May. 1	June. 3	July. 4	August. 7	September. 1	October. 1	November. 2	December. 1	Total.	American.	Foreign.	Not stated.
Quarters	4			4			7			2			17			
Ages	Under 10. 10 to 15. 15 to 20. 20 to 30. 30 to 40. 40 to 50. 50 to 60. 60 to 70. 70 to 80. Over 80. Not stated.	1 1 1 6 5 1 2 1 1	1 1 1 6 5 1 2 1 1	1 1 1 6 5 1 2 1 1	1 1 1 6 5 1 2 1 1	1 1 1 6 5 1 2 1 1	1 1 1 6 5 1 2 1 1	1 1 1 6 5 1 2 1 1	1 1 1 6 5 1 2 1 1	1 1 1 6 5 1 2 1 1	1 1 1 6 5 1 2 1 1	1 1 1 6 5 1 2 1 1	1 1 1 6 5 1 2 1 1	1 1 1 6 5 1 2 1 1	1 1 1 6 5 1 2 1 1	1 1 1 6 5 1 2 1 1
Nativity														14	1	2
Males														13		
Females														4		

Percentage to total mortality of city, 8.17.

The mortality from consumption in the city of Portsmouth for the year 1891 was 17, as against 37 reported the previous year — 13 males and 4 females. In August there were 4 deaths; in April and July, 3 each; in February, 2; in January, March, June, October, and November, 1 each. One of the decedents was between 15 and 20 years of age; 6 between 20 and 30; 5 between 30 and 40; 1 between 40 and 50; 2 between 50 and 60; 1 between 60 and 70; and 1 over 70. Fourteen were American-born, 1 foreign-born, and 2 nativity not stated.

TABLE No. 44.

Deaths from Pulmonary Consumption, by Seasons, Ages, and Nativity, 1891, for the City of Dover.

Months	January. 6	February. 2	March. 2	April. 2	May. 4	June. 4	July. 2	August. 2	September. 4	October. 1	November. 4	December. 4	Total.	American.	Foreign.	Not stated.
Quarters.....	10			10			8			9			37			
Ages.....	Under 10. 3	10 to 15. 2	15 to 20. 6	20 to 30. 10	30 to 40. 6	40 to 50. 6	50 to 60. 2	60 to 70. 1	70 to 80. 3	Over 80. Not stated.						
Nativity														26	10	1
Males.....													17			
Females													20			

Percentage to total mortality of city, 12.01.

The number of deaths returned from the city of Dover for 1891 was 37, as against 52 in 1890 — 17 males and 20 females. Six died in January; 4 each in May, June, September, November, and December; 2 each in February, March, April, July, and August; and 1 in October. Three of the decedents were under 10 years of age; 6 between 15 and 20; 10 between 20 and 30; 6 between 30 and 40; 6 between 40 and 50; 2 between 50 and 60; 1 between 60 and 70; 3 between 70 and 80. Twenty-six were American-born, 10 foreign-born, and 1 nativity not stated.

TABLE No. 45.

Deaths from Pulmonary Consumption, by Seasons, Ages, and Nativity, 1891, for the City of Keene.

Months	January. 1	February. 1	March. 2	April. 2	May. 1	June. 1	July. 1	August. 1	September. 3	October. 1	November. 3	December. 3	Total.	American.	Foreign.
Quarters	2			5			1			7			15		
Ages	Under 10. 1	10 to 15. 2	15 to 20. 3	20 to 30. 3	30 to 40. 3	40 to 50. 1	50 to 60. 4	60 to 70. 1	70 to 80. 1	Over 80. Not stated.					
Nativity														12	3
Males													5		
Females													10		

Percentage to total mortality of city, 11.90.

The city of Keene returned 15 deaths from consumption in 1891 — 5 males and 10 females. Three each died in October and December; 2 each in April and May; 1 each in January, March, June, July, and November. One decedent was under 10 years of age; 2 between 15 and 20; 3 between 20 and 30; 3 between 30 and 40; 1 between 40 and 50; 4 between 50 and 60; 1 over 80. Twelve were American-born and 3 foreign-born.

TABLE No. 46.

Deaths from Pulmonary Consumption, by Seasons, Ages, and Nativity, 1891, for the City of Rochester.

Months	3 January.	4 February.	2 March.	1 April.	2 May.	1 June.	1 July.	1 August.	1 September.	2 October.	1 November.	1 December.	Total.	American.	Foreign.	Not stated.
Quarters	9			4			1			3			17			
Ages	Under 10. 1	10 to 15. 4	15 to 20. 4	20 to 30. 4	30 to 40. 4	40 to 50. 4	50 to 60. 1	60 to 70. 1	70 to 80. 1	Over 80. 2	Not stated.					
Nativity														16	1	
Males													6			
Females													11			

Percentage to total mortality of city, 11.80.

Seventeen deaths from consumption were returned from the city of Rochester in 1891—6 males and 11 females. There were 3 deaths in January; 4 in February; 2 each in March, May, and October; 1 each in April, June, July, and December. One decedent was under 10 years of age; 4 between 15 and 20; 4 between 20 and 30; 4 between 30 and 40; 1 between 50 and 60; 1 between 70 and 80; and 2 not stated. Sixteen of the decedents were American-born, and 1 nativity not stated.

TABLE No. 47.

Percentage of Deaths from Consumption to the Total Mortality of the Cities of the State, for the years 1883 to 1891, inclusive.

	1883.	1884.	1885.	1886.	1887.	1888.	1889.	1890.	1891.
Manchester	14.89	14.28	13.03	15.01	11.15	12.37	9.30	10.29	10.40
Concord...	11.41	8.66	10.68	8.60	10.13	10.23	9.81	9.13	9.30
Nashua...	16.96	13.72	14.86	10.49	9.73	8.20	8.64	10.69	10.29
Dover.....	20.97	16.60	16.17	21.17	14.57	12.01	10.31	16.40	12.01
Portsmouth	16.02	14.74	12.18	17.84	16.26	13.26	7.73	14.34	8.17
Keene.....	16.91	16.00	22.80	16.00	11.90	9.47	9.62	10.25	11.90
Rochester..	.....	.....	.....	.....	.....	.....	.....	.....	11.80

Table No. 47 gives a comparative view of the percentages of deaths from consumption in the several cities of the State for the past eight years, with the exception of Rochester, which has only recently become a city. A decrease of percentages in later years is noticeable.

Table No. 48 gives the mortality of this disease by ages and sex, for the year 1891, by counties.

TABLE No. 48.
Deaths from Consumption, by Ages and Sex, by Counties, for 1891.

COUNTIES.	SEX.	Under 1.	1 to 5.	5 to 10.	10 to 15.	15 to 20.	20 to 30.	30 to 40.	40 to 50.	50 to 60.	60 to 70.	70 to 80.	Over 80.	Not stated.	Total.	Grand total.
Rockingham	Males	1	1	1	3	11	8	8	7	3	2	2	1	...	48	...
	Females	2	3	1	6	11	9	2	2	2	2	2	1	...	42	85
Strafford	Males	1	1	...	6	10	9	5	6	1	1	1	2	...	42	...
	Females	1	2	1	8	18	9	3	1	2	4	4	...	2	52	94
Belknap	Males	1	1	1	2	5	5	2	2	...	...	2	...	...	21	...
	Females	2	...	...	3	6	5	2	2	...	...	2	...	1	23	44
Carroll	Males	...	2	...	...	...	1	3	5	1	...	...	...	...	13	...
	Females	...	1	...	2	4	5	...	2	1	1	2	2	...	19	32
Merrinack	Males	1	1	1	1	12	5	5	2	3	3	1	...	...	32	...
	Females	1	1	1	2	10	19	4	4	1	1	5	...	...	57	89
Hillsborough	Males	5	4	...	2	7	18	16	7	3	1	1	...	4	89	...
	Females	2	1	2	5	9	16	21	5	8	7	7	1	2	108	197
Cheshire	Males	1	...	...	1	2	4	2	2	1	1	2	1	1	17	...
	Females	...	...	...	4	8	3	6	6	3	3	2	...	...	32	49

TABLE No. 48. — *Continued.*

COUNTIES.	SEX.	Under 1.	1 to 5.	5 to 10.	10 to 15.	15 to 20.	20 to 30.	30 to 40.	40 to 50.	50 to 60.	60 to 70.	70 to 80.	Over 80.	Not stated.	Total.	Grand total.
Sullivan.....	Males.....	.....	1	.....	.....	.....	3	2	3	1	2	1	.....	.....	13	.....
	Females.....	.....	.....	.....	.....	.....	.....	.....	.....	3	1	2	1	.....	7	20
Grafton.....	Males.....	.....	.....	.....	2	3	7	6	2	2	1	3	1	.....	27	.....
	Females.....	.....	.....	2	3	4	6	3	4	2	3	2	1	.....	30	57
Coös.....	Males.....	1	.....	.....	1	.....	5	2	.....	2	1	2	.....	.....	14	.....
	Females.....	.....	1	.....	.....	1	5	2	1	4	.....	.....	.....	.....	14	28
Total for State.....		19	19	9	17	70	174	131	89	67	37	43	10	10	695	695

TABLE No. 49.
Deaths from Consumption, by Months and Sex, by Counties, for 1891.

COUNTIES.	SEX.	January.	February.	March.	April.	May.	June.	July.	August.	September.	October.	November.	December.	Not stated.	Total.	Grand total.
Rockingham.	Males	4	2	6	8	3	4	3	3	2	3	3	2	...	43	...
	Females	4	2	5	4	7	1	6	4	3	1	1	4	...	42	85
Strafford	Males	4	4	3	6	4	3	1	3	3	4	4	3	...	42	...
	Females	10	6	4	4	4	5	4	2	4	2	2	5	...	52	94
Belknap.	Males	1	1	1	2	3	3	...	3	4	2	...	1	...	21	...
	Females .....	...	2	1	1	2	4	2	4	3	...	2	2	...	23	44
Carroll	Males .....	...	1	2	3	1	...	...	3	1	1	1	...	...	13	...
	Females	2	1	2	1	2	2	1	1	4	3	...	...	...	19	32
Merrimack.	Males	5	1	1	3	2	3	5	1	5	2	2	2	...	32	...
	Females	2	3	3	5	6	9	8	6	2	6	3	4	...	57	89
Hillsborough	Males	9	7	5	7	7	9	7	7	8	3	11	7	2	89	...
	Females	10	8	4	12	12	8	10	4	12	8	7	13	...	108	197
Cheshire	Males	4	...	1	1	1	...	2	...	3	2	2	1	...	17	...
	Females	6	1	2	3	5	2	1	...	1	5	3	3	...	32	49

TABLE No. 49.—*Continued.*
Deaths from Consumption, by Months and Sex, by Counties, for 1891.

COUNTIES.	SEX.	January.	February.	March.	April.	May.	June.	July.	August.	September.	October.	November.	December.	Not stated.	Total.	Grand total.
Sullivan.....	Males.....	3	1	2	1	1	1	1	1	2	1	1	1	1	13	20
	Females.....	3	1	2	1	1	1	2	1	1	1	1	1	1	7	20
Grafton.....	Males.....	3	3	4	1	2	2	1	1	3	3	3	1	1	27	57
	Females.....	2	3	2	3	4	1	4	4	1	4	1	2	1	30	57
Coös.....	Males.....	4	4	2	2	1	2	1	1	1	1	3	1	1	14	28
	Females.....	3	3	2	2	1	2	1	1	1	1	1	2	1	14	28
Total for State.....		69	54	52	66	67	61	60	48	62	52	48	54	2	695	695

TABLE No. 50.

Deaths from Consumption, by Nativity, Civil Condition, and Sex, by Counties, for 1891.

COUNTIES.	SEX.	American.	Foreign.	Not stated.	Married.	Single.	Widowed.	Not stated.	Total.	Grand total.
Rockingham	Males	34	4	5	18	19	*5	1	43	....
	Females ..	34	4	4	16	22	3	1	42	85
Strafford	Males	33	8	1	21	15	2	4	42	....
	Females ..	38	10	4	20	26	5	1	52	94
Belknap	Males	15	3	3	9	11	1	....	21	....
	Females ..	16	2	5	4	12	5	2	23	44
Carroll	Males	12	....	1	8	4	1	....	13	....
	Females ..	17	1	1	12	6	1	....	19	32
Merrimack	Males	26	5	1	13	17	2	....	32	....
	Females ..	44	6	7	27	22	*8	....	57	89
Hillsborough	Males	45	33	11	39	38	4	8	89	....
	Females ..	61	37	10	46	39	6	17	108	197
Cheshire	Males	15	....	2	6	8	2	1	17	....
	Females ..	27	5	....	18	10	4	....	32	49
Sullivan	Males	11	1	1	11	2	....	....	13	....
	Females ..	4	1	2	2	....	4	1	7	20
Grafton	Males	20	4	3	11	13	3	....	27	....
	Females ..	25	4	1	13	13	4	....	30	57
Coös	Males	7	1	6	6	7	....	1	14	....
	Females ..	9	3	2	9	1	*4	....	14	28
Total for State		493	132	70	309	285	64	37	695	695

* Divorced, 1.

Table No. 50 gives the nativity, civil condition, and sex of the decedents, by counties, for 1891. Out of a total of 695 deaths from this disease 493 were American-born, 132 foreign-born, and 70 nativity not stated; 309 were married, 285 single, 61 widowed, and 3 divorced.

PNEUMONIA.

TABLE No. 51.

Mortality from Pneumonia, by Counties, from 1884 to 1891, inclusive.

COUNTIES.	YEARS.								Average.
	1884.	1885.	1886.	1887.	1888.	1889.	1890.	1891.	
Rockingham ..	45	63	77	70	83	68	90	77	72
Strafford.....	39	48	37	46	52	38	80	73	52
Belknap.....	18	24	25	44	50	37	42	28	33
Carroll.....	30	27	15	33	46	49	37	42	35
Merrimack....	50	72	60	85	73	86	94	73	74
Hillsborough..	110	128	112	128	129	131	158	185	135
Cheshire.....	36	52	39	55	55	52	44	54	48
Sullivan.....	21	22	23	22	30	31	32	31	26
Grafton.....	66	48	54	52	77	64	74	53	61
Coös.....	21	20	24	21	33	26	52	57	32
Total.....	436	504	466	556	628	582	703	673	568

Table No. 51 gives the mortality from pneumonia, by counties, from 1884 to 1891, inclusive, with averages for that period. The total number of deaths from this disease for the year 1891 was 673, as against 703 for the preceding year.

TABLE No. 52.

Mortality from Pneumonia from 1884 to 1891, inclusive, by Ages.

YEARS.	Under 1 year.	1 to 5.	5 to 10.	10 to 15.	15 to 20.	20 to 30.	30 to 40.	40 to 50.	50 to 60.	60 to 70.	70 to 80.	Over 80.	Unknown.	Total.
1884.....	51	48	3	3	6	27	23	30	36	50	97	54	8	436
1885.....	69	49	8	4	11	15	27	32	37	72	105	74	1	504
1886.....	57	38	13	6	13	17	24	29	49	68	92	53	7	466
1887.....	68	33	7	5	13	28	32	40	48	89	121	68	4	556
1888.....	67	45	6	10	19	40	49	51	62	67	123	81	8	628
1889.....	61	50	8	12	17	29	36	40	48	98	100	79	4	582
1890.....	73	48	9	10	11	35	46	45	79	106	127	107	7	703
1891.....	73	43	15	6	11	43	31	38	74	109	126	95	9	673

The mortality from pneumonia from 1884 to 1891, inclusive, by age periods is given in table No. 52. It will be seen that for the entire period the mortality is greatest in the age period between 70 and 80. A comparison of these figures with the number of persons living in the different age periods shows pneumonia to be an exceedingly fatal disease to the aged.

TABLE No. 53.

Mortality from Pneumonia, by Months and Quarters, from 1884 to 1891, inclusive.

YEARS.	January.	February.	March.	April.	May.	June.	July.	August.	September.	October.	November.	December.	Not stated.
1884	55	55	51	52	32	13	14	11	5	28	51	67	2
1885	53	59	101	95	35	25	13	10	10	33	38	32	...
1886	32	44	73	51	51	33	22	18	18	24	46	54	...
1887	71	73	85	85	49	17	13	13	14	34	47	54	1
1888	72	95	75	73	76	24	16	23	21	43	36	72	2
1889	69	66	79	102	51	22	15	19	16	53	41	49	...
1890	213	74	69	43	47	35	18	9	23	23	69	79	1
1891	73	60	82	72	95	41	13	7	14	23	37	152	4
Total	638	526	615	573	436	210	124	110	121	261	365	559	
Quarters	1,779			1,219			355			1,185			

The above table shows the mortality from pneumonia, by months and quarters, from 1884 to 1891, inclusive. For the year 1891 the greatest number of deaths occurred in December, but for the eight years included in the table in January. The smallest number for the year was in August, as well as for the period given.

BRAIN DISEASES.

TABLE No. 54.

Mortality from Brain Diseases from 1884 to 1891, inclusive.

YEARS.	DISEASES.						
	Cephalitis.*	Apoplexy.	Paralysis.	Insanity.	Convulsions.	Brain diseases.	Total.
1884.....	120	192	248	22	99	134	815
1885.....	133	206	278	27	93	122	859
1886.....	141	220	249	24	71	127	832
1887.....	117	210	253	25	64	121	790
1888.....	143	243	273	37	88	112	896
1889.....	151	259	196	35	76	126	843
1890.....	186	263	251	28	65	140	933
1891.....	161	283	241	44	78	130	917
Average	144	234	249	30	79	129	861

* Meningitis and Cerebritis included.

Table No. 54 exhibits the mortality from brain diseases for eight years. In 1891 there were returned 917 deaths from brain diseases under the several classifications given in the table. Under apoplexy there were returned 283; paralysis, 241; cephalitis, 161; brain diseases not otherwise classified, 130; convulsions, 78; insanity, 44.

DIARRHEAL DISEASES.

TABLE No. 55.

Mortality from Diarrheal Diseases from 1884 to 1891, inclusive.

YEARS.	DISEASES.					Total of diarrheal diseases.
	Cholera infantum.	Cholera morbus.	Diarrhea.	Dysentery.	Enteritis.	
1884	266	21	52	80	69	488
1885	219	20	40	40	57	376
1886	362	14	38	79	53	546
1887	336	16	38	53	57	500
1888	370	8	50	63	39	530
1889	353	12	68	67	56	556
1890	399	12	.....	50	63	524
1891	486	16	46	51	73	672
Average	349	15	42	60	58	524

There were 672 deaths from diarrheal diseases in 1891, as against 524 in 1890—148 more than for the latter year. Cholera infantum was responsible for 486 deaths; enteritis, 73; dysentery, 51; diarrhea, 46; cholera morbus, 16.

CHOLERA INFANTUM.

TABLE No. 56.

Mortality from Cholera Infantum from 1884 to 1891, inclusive.

YEARS.	Deaths.	Percentage of deaths to deaths from all causes.	Death-rates per 10,000 living (estimated population).
1884	266	4.29	7.41
1885	219	3.53	6.05
1886	362	5.63	9.92
1887	336	5.18	9.13
1888	370	5.39	9.98
1889	353	5.27	9.44
1890	399	5.41	10.59
1891	486	6.64	12.08
Average	349	.....	.....

Table No. 56 exhibits the mortality from cholera infantum from 1884 to 1891, inclusive; also the percentage of deaths from this disease to deaths from all causes, and the rate to each 10,000 of the living population. The percentages show graphically the increase this disease is making. The number of deaths from it being in 1891, 486, or 137 greater than the average for the past eight years.

TABLE No. 57.

Mortality from Cholera Infantum, by Ages, from 1884 to 1891, inclusive.

YEARS.	Under 1.	1 to 5.	5 to 10.	10 to 15.	15 to 20.	20 to 30.	30 to 40.	40 to 50.	50 to 60.	60 to 70.	70 to 80.	Over 80.	Unknown.	Total.
1884.....	214 48						1	1						2 266
1885.....	186 33													219
1886.....	283 77	2												362
1887.....	284 51													1 336
1888.....	298 70													2 370
1889.....	297 54	1												1 353
1890.....	343 52	4												399
1891.....	409 74	3												486

The above table shows the mortality from cholera infantum, by ages, from 1884 to 1891, inclusive. The largest number reported in any year was 486, in 1891. This table shows most emphatically that this disease is one of early childhood, chiefly confined to the first year of life.

TABLE No. 58.

Cholera Infantum, by Cities.

CITIES.	1883.	1884.	1885.	1886.	1887.	1888.	1889.	1890.	1891.
Manchester	131	112	88	122	148	117	86	146	122
Dover	7	10	15	15	13	19	5	12	25
Nashua	15	14	13	30	20	39	43	56	55
Portsmouth	4	3	9	6	4	9	9	8	11
Concord	9	12	5	7	8	11	13	8	25
Keene	9	6	2	7	5	2	8	5	5
Rochester									8
Total for cities	175	157	132	187	198	197	164	235	251
Total for State	278	268	219	362	336	370	353	399	486

This table shows the mortality from cholera infantum in the cities of the State. Of the 486 deaths from this disease in 1891, 235 occurred in the cities. Manchester gives a mortality of 122, which is not only the largest number returned from any city, but much the largest in proportion to the population.

TABLE No. 59.

Cholera Infantum by Ages, Sex, and Months, particularly showing the number of Decedents in the Cities and Towns returning the greatest Mortality from the Disease.

TOWNS.	SEX.	AGES.		MONTHS.												Grand total.			
		Under 1.	1 to 5.	5 to 10.	January.	February.	March.	April.	May.	June.	July.	August.	September.	October.	November.		December.	Unknown.	Total.
Concord	Males	12	3		1						4	4	4	4	2				15
	Females	10								1	2	5	2						10
Dover	Males	11		1							2	6	2			2			12
	Females	11	2							1	7	1	4						13
Keene	Males	3									1	1	1						3
	Females	2									1	1							2
Manchester	Males	59	7						1	2	17	29	9	9	6	2			66
	Females	46	10			1				4	16	19	10	6					56
Nashua	Males	27	4		1					1	9	16	3	1					31
	Females	22	2							1	9	6	5	3					24
Portsmouth	Males	5										5							5
	Females	5	1									4	1	1					6

Rochester	Males	5	1	1	1	1	1	4	1	1	1	1	5
	Females	2	1	1	1	1	1	2	1	1	1	1	3
Laconia	Males	11	2	1	1	1	1	3	8	1	2	1	14
	Females	17	1	1	1	1	1	4	5	6	2	1	18
Berlin	Males	9	5	1	1	1	2	3	5	1	2	1	14
	Females	7	4	1	1	1	1	3	2	3	1	1	11
Newmarket	Males	3	2	1	1	1	1	1	2	1	1	1	5
	Females	7	2	1	1	1	1	2	2	3	2	1	9
Somersworth	Males	4	2	1	1	1	1	1	2	1	1	1	6
	Females	6	2	1	1	1	1	4	1	3	1	1	8
Pembroke	Males	10	1	1	1	1	1	2	2	6	1	1	10
	Females	6	1	1	1	1	1	2	5	1	1	1	7
Franklin	Males	1	1	1	1	1	1	1	1	1	1	1	2
	Females	6	1	1	1	1	1	5	1	1	1	1	7
Littleton	Males	4	1	1	1	1	1	2	2	1	1	1	4
	Females	1	1	1	1	1	1	1	1	1	1	1	5
Remaining towns	Males	53	7	1	1	1	1	1	22	19	8	1	60
	Females	44	15	1	1	1	1	4	19	26	7	1	59
Total	Males	217	33	2	1	2	1	6	49	109	52	2	252
	Females	192	41	1	1	2	1	8	54	77	24	1	234
Grand total		409	74	3	1	4	1	14	103	186	116	46	486

TABLE No. 60.

Mortality from Cancer, with ratios to estimated Population and to Total Mortality from 1884 to 1891, inclusive.

YEARS.	Deaths.	Death-rates per 10,000 of esti- mated popula- tion.	Ratio to total mortality per 1,000.
1884	213	5.93	34.39
1885	212	5.85	34.19
1886	206	5.64	32.06
1887	218	5.92	33.65
1888	203	5.47	29.62
1889	213	5.70	31.81
1890	276	7.33	37.45
1891	213	5.61	30.32
Average.....	219	.....	.....

TABLE No. 61.

Mortality from Diphtheria from 1884 to 1891, inclusive, by Ages.

YEARS.	Under 1.	1 to 5.	5 to 10.	10 to 15.	15 to 20.	20 to 30.	30 to 40.	40 to 50.	50 to 60.	60 to 70.	70 to 80.	Over 80.	Unknown.	Total.
1884.....	8	39	34	17	4	2	..	1	3	..	..	1	1	110
1885.....	10	32	22	5	3	4	..	1	1	..	..	..	..	78
1886.....	9	53	58	22	7	3	1	1	2	..	..	..	..	156
1887.....	7	74	51	20	6	9	4	2	1	1	1	..	1	177
1888.....	6	43	36	7	4	2	1	1	2	1	..	..	..	103
1889.....	7	86	68	18	13	10	3	3	..	1	..	..	1	210
1890.....	6	64	45	26	10	3	4	3	..	..	..	1	2	164
1891.....	5	74	48	17	7	2	4	..	..	1	..	..	2	160

Table No. 61 shows the mortality from diphtheria by age periods from 1884 to 1891, inclusive. One hundred and sixty deaths were reported from this disease for the year 1891,—four less than were returned the preceding year. The greatest mortality from this cause during the past eight years was in 1889, when 210 deaths were reported. It will be seen by the table that the greatest number of deaths occurred in children between the ages of 1 and 5 years; the next largest number between 5 and 10. This disease is largely confined to childhood. It is not peculiar to any particular season of the year. In 1891, 12 died in January, 15 in February, 13 in March, 11 in April, 17 in May, 12 in June, 5 in July, 12 in August, 19 in September, 14 in October, 14 in November, 13 in December, and 3 unknown. Eighty-nine of the decedents were males, 70 females, and 1 sex not stated.

CROUP.

TABLE No. 63.

Mortality from Croup from 1884 to 1891, inclusive, by Ages.

YEARS.	Under 1.	1 to 5.	5 to 10.	10 to 15.	15 to 20.	20 to 30.	30 to 40.	40 to 50.	50 to 60.	60 to 70.	70 to 80.	Over 80.	Unknown.	Total.
1884	8	35	6											49
1885	20	41	9			1	2		1					74
1886	13	40	10	1										64
1887	26	48	7	2							1			84
1888	16	67	9				1				1			94
1889	11	65	11	1										88
1890	16	41	6	1										64
1891	11	32	10	2										156

The mortality from croup for the past eight years is shown in table No. 63. In 1891 there were 56 deaths from this cause, a less number than has been reported in any one year since 1884. This is also a disease of childhood chiefly, as will be seen by a study of the table.

TABLE No. 64.

Mortality from Croup and Diphtheria from 1884 to 1891, inclusive.

YEARS.	Deaths.			Percentages of deaths to deaths from all causes.			Death-rates per 10,000 living.		
	Croup.	Diphtheria.	Total.	Croup.	Diphtheria.	Total.	Croup.	Diphtheria.	Total.
1884	49	110	159	.79	1.77	2.56	1.36	3.06	4.42
1885	74	78	152	1.19	1.25	2.44	2.04	2.15	4.19
1886	64	156	220	.99	2.41	3.40	1.75	4.27	6.02
1887	84	177	261	1.29	2.73	4.02	2.28	4.81	7.09
1888	94	103	197	1.37	1.50	2.87	2.53	2.77	5.30
1889	88	210	298	1.31	3.13	4.44	2.35	5.61	7.96
1890	64	164	228	.86	2.21	3.08	1.69	4.32	6.02
1891	56	160	216	.79	2.20	2.10	1.48	4.22	5.69
Total.	573	1,158	1,731	....	....	....	....	....	....
Average	72	145	216	....	....	....	....	....	....

TYPHOID FEVER.

TABLE No. 65.

Mortality from Typhoid Fever from 1884 to 1891, inclusive.

YEARS.	Deaths.	Percentages of deaths to deaths from all causes.	Death-rates per 10,000 living (estimated population).
1884	137	2.21	3.81
1885	136	2.19	3.75
1886	194	3.01	5.31
1887	134	2.06	3.64
1888	150	2.18	4.04
1889	161	2.40	4.30
1890	143	1.94	3.79
1891	170	2.42	4.48
Total	1,225	.....	.....
Average	153	.....	.....

The above table shows the mortality from typhoid fever from 1884 to 1891, inclusive, with percentage to deaths from all causes and the death-rate to each 10,000 of the living population. In 1891 there were returned 170 deaths from this disease, a larger number of decedents than had been recorded in any one year since 1886. The average yearly deaths for the past eight years is 153.

TABLE No. 66.

Mortality from Typhoid Fever, by Counties, with Percentages of Deaths to Total Mortality, from 1884 to 1891, inclusive.

COUNTIES.	1884.		1885.		1886.		1887.		1888.		1889.		1890.		1891.	
	Deaths.	Percentages.	Deaths.	Percentages.	Deaths.	Percentages.	Deaths.	Percentages.	Deaths.	Percentages.	Deaths.	Percentages.	Deaths.	Percentages.	Deaths.	Percentages.
Rockingham.....	17	1.94	18	1.97	23	2.38	10	1.14	9	1.00	15	1.71	12	1.12	30	3.03
Strafford.....	12	1.91	12	1.93	21	3.44	17	2.52	13	1.88	19	2.74	19	2.37	12	1.48
Belknap.....	13	4.56	9	3.11	31	8.56	13	3.52	8	2.04	8	2.05	13	3.47	5	1.28
Carroll.....	4	1.20	8	2.97	3	.99	5	1.70	6	1.82	6	2.01	2	.66	3	.88
Merrimack.....	15	2.03	15	1.88	23	2.76	14	1.67	33	3.58	20	2.24	27	2.74	16	1.68
Hillsborough.....	32	1.93	37	2.17	46	2.73	41	2.41	42	2.27	39	2.24	38	1.92	49	2.50
Cheshire.....	14	2.81	14	2.83	12	2.52	6	1.24	5	1.02	10	1.90	10	1.79	10	2.07
Sullivan.....	4	1.46	4	1.40	6	1.82	5	1.76	3	.91	4	1.26	1	.30	7	2.50
Grafton.....	13	1.99	11	1.80	21	3.40	9	1.49	19	2.90	15	2.40	14	2.15	23	3.55
Cooks.....	13	4.94	8	3.52	8	3.12	14	3.80	12	3.82	25	7.18	7	2.12	15	3.27
Total.....	137	2.21	136	2.19	194	3.01	134	2.06	150	2.18	161	2.40	143	1.94	170	2.42

TABLE No. 67.

Mortality from Typhoid Fever from 1884 to 1891, inclusive, by Ages.

YEARS.	Under 1 year.	1 to 5.	5 to 10.	10 to 15.	15 to 20.	20 to 30.	30 to 40.	40 to 50.	50 to 60.	60 to 70.	70 to 80.	Over 80.	Unknown.	Total.
1884.....	5	10	7	11	21	34	12	8	7	8	8	3	3	137
1885.....	2	7	7	11	20	34	14	8	7	10	11	3	2	136
1886.....	2	6	15	12	33	51	16	12	15	14	16	2		194
1887.....	2	6	1	16	22	41	17	8	7	6	5	2	1	134
1888.....	3	13	4	11	26	39	12	8	8	9	8	3	6	150
1889.....	4	5	9	14	26	50	13	14	10	5	6	4	1	161
1890.....	1	3	10	11	24	33	18	14	10	7	7	3	2	143
1891.....	1	3	14	12	27	52	17	15	8	9	8	3	1	170

TABLE No. 68.

Mortality from Bright's Disease, Nephritis, and other Kidney Diseases, and from Dropsy, with Ratios to Total Mortality, from 1884 to 1891, inclusive.

YEARS.	Total mortality from all causes.	Deaths from Bright's disease, nephritis, and other kidney diseases.	Ratio to total mortality per 1,000.	Deaths from dropsy.	Ratio to total mortality per 1,000.	Totals.	Ratio to total mortality per 1,000.
1884	6,194	140	22.60	80	12.91	220	35.51
1885	6,201	157	25.32	90	14.51	247	39.83
1886	6,426	143	22.25	83	12.92	226	35.17
1887	6,479	163	25.16	79	12.19	242	37.35
1888	6,854	154	22.47	75	10.94	229	33.41
1889	6,696	200	29.87	62	9.26	262	39.13
1890	7,368	201	27.28	53	7.19	254	34.47
1891	7,310	219	29.96	41	5.61	260	35.57
Average	6,691	172	25.54	69	10.31	242	36.16

SCARLET FEVER.

TABLE No. 69.

Mortality from Scarlatina from 1884 to 1891, inclusive.

YEARS.	Deaths.	Percentages of deaths to deaths from all causes.	Death-rates per 10,000 living population.*
1884	52	.83	1.44
1885	53	.85	1.46
1886	21	.32	.57
1887	26	.40	.70
1888	34	.49	.91
1889	18	.26	.48
1890	16	.21	.42
1891	13	.18	.34
Total	233	.....	.....
Average	29	.....	.....

* Population estimated for all but census years.

Table No. 69 gives the number of decedents returned since 1884, with percentages. This table is significant in showing what has been done by restrictive action.

TABLE No. 70.

Mortality from Scarlatina from 1884 to 1891, inclusive, by Ages.

YEARS.	Under 1.	1 to 5.	5 to 10.	10 to 15.	15 to 20.	20 to 30.	30 to 40.	40 to 50.	50 to 60.	60 to 70.	70 to 80.	Over 80.	Unknown.	Total.
1884.....	7	20	12	8	1	4								52
1885.....	5	30	11	4	1	1	1							53
1886.....	1	8	9	1		1								121
1887.....	5	10	3	6		2								26
1888.....	5	16	5	3	2		1	1		1				34
1889.....	4	7	3	2	1									118
1890.....	2	10	1	1		2								16
1891.....	1	7	4	1										13

TABLE No. 71.

Deaths from Scarlatina by Counties, 1891.

COUNTIES.	Deaths.	COUNTIES.	Deaths.
Rockingham		Hillsborough	2
Strafford	1	Cheshire	2
Belknap	1	Sullivan	
Carroll		Grafton	2
Merrimack	2	Coös	3

MEASLES.

TABLE No. 72.

Mortality from Measles from 1884 to 1891, inclusive.

YEARS.	Deaths.	Percentages of deaths to deaths from all causes.	Death-rates per 10,000 living population.*
1884	3	.04	.08
1885	45	.72	1.24
1886	18	.28	.49
1887	39	.60	1.06
1888	55	.80	1.48
1889	16	.23	.42
1890	9	.12	.23
1891	19	.26	.50
Total	204	.....	.....
Average	26	.....	.....

* Population estimated for all but census years.

This table shows the mortality from measles from 1884 to 1891, inclusive, with percentage of deaths to total mortality; and the death-rate to each 10,000 of the living population.

In 1891 there were 19 deaths returned from this cause: Five were under 1 year of age; 6 between 1 and 5; 2 between 5 and 10; 2 between 15 and 20; 1 between 30 and 40; 1 between 40 and 50; 1 between 60 and 70; and 1 age not stated.

TABLE No. 73.

Mortality from Measles from 1884 to 1891, inclusive, by Ages.

YEARS.	Under 1.	1 to 5.	5 to 10.	10 to 15.	15 to 20.	20 to 30.	30 to 40.	40 to 50.	50 to 60.	60 to 70.	70 to 80.	Over 80.	Unknown.	Total.
1884.....	1	1			1									3
1885.....	12	26	5	1	1									45
1886.....	5	13												18
1887.....	19	10	2	1	3		2	1		1				39
1888.....	14	20	6	3	2	2	5	1	1			1		55
1889.....	2	6	1		2	2	1		1					16
1890.....	5	4												9
1891.....	5	6	2		2		1	1		1				19

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VALUATION AND TAXATION

OF THE

STATE OF NEW HAMPSHIRE,

FOR THE YEAR 1892.

COMPILED BY THE SECRETARY OF THE STATE BOARD OF EQUALIZATION.

BOARD.

JOHN M. HILL, <i>Chairman</i>	. . . . .	CONCORD.
CHARLES A. DOLE, <i>Secretary</i>	. . . . .	LEBANON.
JEWETT CONNER	. . . . .	EXETER.
JOHN M. PARKER	. . . . .	GOFFSTOWN.
EDWIN W. DREW	. . . . .	STEWARTSTOWN (P. O., COLEBROOK).

VOLUME I, PART III.

CONCORD:

IRA C. EVANS, PUBLIC PRINTER.

1892.

STATE BOARD OF EQUALIZATION.

CONCORD, N. H., November 15, 1892.

The total inventories for the current year aggregate the sum of \$191,804,024 against \$188,031,856 for 1891, an increase of \$3,772,168; savings-bank deposits, \$73,098,476 against \$69,834,914 for 1891, an increase of \$3,263,562; insurance capital, \$1,525,000 against \$1,325,000 for 1891, an increase of \$200,000. Total, \$266,427,500 against \$259,191,770 for 1891, an increase of \$7,235,730.

In the valuation of railroads a deduction has been made of all sums assessed in towns and paid by the railroads upon their property not required for general use in the running of the roads. The amount thus obtained has been assessed at the average rate of property taxation throughout the State, to wit: \$1.48 upon each \$100 of taxable property. This rate in 1891 was \$1.48; in 1890, \$1.50.

The railroad tax is \$301,681.10 against \$283,042.72 for 1891; telegraph tax, \$2,891.92 against \$2,697.53 for 1891; telephone tax, \$2,088.28 against \$2,109.06 for 1891; total, \$306,661.30 against \$287,849.31 for 1891, increase, \$18,811.99.

The Manchester and Keene railroad organization has lapsed, and its valuation (\$120,000) has been assessed, one half each to the Boston and Lowell and the Concord and Montreal railroads, by which corporations it is owned in equal shares. The Concord Street Railway is taxed for the first time, its period of ten years' exemption having passed.

The expense of the railroad commission is met by a tax levied upon the gross receipts of the various railroads. Its amount is \$5,468.99 against \$7,424.03 for 1891. The decrease arises mainly from the non-payment of salary occasioned by the vacancy existing for a portion of the year in the board of railroad commissioners.

As a matter of comparison and reference we append a record of the taxes assessed by the Board of Equalization since it was constituted in 1879, a period of fourteen years. Prior to that date the assessment was made by the judges of the Supreme Court.

PROPERTIES.	Year.	Amount of tax assessed.
Railroads	1879	\$215,094.72
Railroads and telegraphs	1880	176,192.44
“ “ “	1881	185,109.85
“ “ “	1882	170,871.58
Railroads, telegraphs and telephones*	1883	194,757.97
“ “ “	1884	206,688.69
“ “ “	1885	194,358.47
“ “ “	1886	213,337.27
“ “ “	1887	220,538.70
“ “ “	1888	242,994.79
“ “ “	1889	246,186.32
“ “ “	1890	272,500.02
“ “ “	1891	287,849.31
“ “ “	1892	306,661.30

It will be observed that the tax for 1879 (the first assessed by the board) was largely in excess of the four subsequent years. In that year numerous appeals were taken from the appraisals of the board, and, by order of the court, carried to referees, resulting in very considerable abatements. Hence the decreased valuations of the years immediately succeeding.

In 1885 the gross amount of the tax (\$194,358.47) is considerably less than for the preceding year (\$206,688.69). This arose from the difference in the rate of taxation throughout the State, at which the two valuations were respectively assessed, being \$1.40 on each \$100 in 1885 and \$1.49 in 1884.

With these exceptions it will be seen that this branch of state taxation has increased quite largely and very regularly, year by year, as the corporate property has grown in value, and the amount of the tax has nearly doubled in the last decade of years.

JOHN M. HILL, *Chairman.*

C. A. DOLE, *Secretary.*

*The telegraph and telephone tax, assessed yearly, is about \$5,000, divided as three to two; the balance is the railroad tax. The tax for the railroad commission is not included in the above figures.

STATISTICAL TABLES.

VALUATION AND ASSESSMENT OF RAILROAD CORPORATIONS FOR 1892.

NAMES.	Valuation of road, rolling stock, and equipments.	Amount taxed in towns.	Valuation exclu- sive of amount taxed in towns.	Amount of tax assessed.
Boston & Lowell.....	\$60,000	\$9,150	\$50,850	\$752.58
Boston & Maine.....	2,750,000	75,340	2,674,660	39,584.97
Concord & Claremont.....	600,000	3,900	596,100	8,822.28
Concord & Montreal.....	6,060,000	152,740	5,907,260	87,427.45
Concord & Portsmouth.....	600,000	.....	600,000	8,880.00
Connecticut River.....	225,000	11,000	214,000	3,167.20
Dover & Winnepesaukee.....	375,000	4,800	370,200	5,478.96
Eastern.....	425,000	75,266	349,734	5,176.06
Fitchburg.....	1,635,000	21,900	1,613,100	23,873.88
Grand Trunk.....	500,000	10,500	489,500	7,244.60
Manchester & Lawrence.....	1,500,000	3,296	1,496,704	22,151.22
Manchester & North Weare.....	80,000	.....	80,000	1,184.00
Mount Washington.....	150,000	.....	150,000	2,220.00
Nashua, Acton & Boston.....	20,000	.....	20,000	296.00
Nashua & Lowell.....	400,000	25,700	374,300	5,539.64
Northern.....	2,250,000	11,300	2,238,700	33,132.76
Peterborough.....	50,000	800	49,200	728.16
Peterborough & Hillsborough.....	70,000	.....	70,000	1,036.00
Portsmouth & Dover.....	100,000	.....	100,000	1,480.00
Portland & Ogdensburg.....	300,000	500	299,500	4,432.60

Portland & Rochester.....	30,000	.....	30,000	444.00
Profile & Franconia Notch.....	100,000	.....	100,000	1,480.00
Sullivan County.....	700,000	.....	700,000	10,360.00
Suncook Valley.....	140,000	3,600	136,400	2,018.72
West Amesbury Branch.....	20,000	.....	20,000	296.00
Whitefield & Jefferson.....	125,000	.....	125,000	1,850.00
Wilton.....	250,000	2,150	247,850	3,668.18
Worcester, Nashua & Rochester.....	1,200,000	14,700	1,185,300	17,542.41
Wolfeborough.....	50,000	4,500	45,500	673.40
Manchester Street Railway.....	30,000	.....	30,000	444.00
Concord Street Railway.....	20,000	.....	20,000	296.00
Totals.....	\$20,815,000	\$431,142	\$20,383,858	\$301,681.10

APPORTIONMENT OF SALARIES AND EXPENSES OF
RAILROAD COMMISSIONERS FOR YEAR
ENDING JUNE 1, 1892.

NAMES.	Gross receipts.	Proportion of expenses.
Boston & Maine.....	\$2,840,000	\$2,311.30
Concord & Montreal.....	2,370,000	1,928.80
Connecticut River.....	70,000	56.97
Fitchburg.....	600,000	488.30
Grand Trunk.....	290,000	236.01
Mount Washington.....	30,000	24.42
Portland & Ogdensburg.....	160,000	130.21
Portland & Rochester.....	15,000	12.21
Profile & Franconia Notch.....	21,000	17.10
Sullivan County.....	244,000	198.58
West Amesbury Branch.....	4,000	3.26
Manchester Street Railway.....	45,000	36.61
Concord Street Railway.....	31,000	25.22
Totals.....	\$6,720,000	\$5,468.99

Other roads, names not enumerated, are included either in Boston & Maine or Concord & Montreal systems.

VALUATION AND ASSESSMENT OF TELEGRAPHS, 1892.

NAMES.	Valuation.	Tax.
American	\$2,000	\$29.60
Chester & Derry	400	5.92
Commercial Union	8,000	118.40
Direct United States Cable	10,000	148.00
Great Northwestern	5,000	74.00
Maine	10,000	148.00
Western Union	160,000	2,368.00
Totals	\$195,400	\$2,891.92

VALUATION AND ASSESSMENT OF TELEPHONES, 1892.

NAMES.	Valuation.	Tax.
Brattleboro & Chesterfield	\$500	\$7.40
Brattleboro & Hinsdale	1,000	14.80
Colebrook & Connecticut Lake	600	8.88
N. E. Telegraph & Telephone Co.	130,000	1,924.00
Plymouth & Campton	3,000	44.40
Winnepesaukee Bell	6,000	88.80
Totals	\$141,100	\$2,088.28

TABLE No. 1.

Number of Ratable Polls, Valuation, and Amount of Taxes in each Town, as returned by the Assessors for 1892.

ROCKINGHAM COUNTY.

TOWNS.	POLLS.		ASSES AND MULES.		HOGS.		CARRIAGES.		Stock in public funds.	Stock in banks and other corporations in this State.	Stock in corporations out of this State.	Surplus capital of banking institutions.
	Number.	Valuation.	Number.	Valuation.	Number.	Valuation.	Number.	Valuation.				
Atkinson.....	132	\$13,200	.....	.....	9	\$70	3	\$160	\$4,000	.....	.....	.....
Auburn.....	168	16,800	.....	.....	25	193	.....	.....	.....	\$500	.....	.....
Brentwood.....	191	19,100	.....	.....	29	480	2	125	.....	1,000	.....	.....
Candia.....	307	30,700	.....	.....	3	20	25	1,250	.....	700	.....	.....
Chester.....	234	23,400	.....	.....	5	26	5	345	.....	5,200	.....	.....
Danville.....	179	17,900	4	\$130	5	43	2	151	.....	.....	.....	.....
Deerfield.....	341	34,100	.....	.....	27	204	12	130	.....	3,900	\$1,000	.....
Derry.....	627	62,700	.....	.....	26	114	25	1,398	.....	29,920	.....	.....
East Kingston.....	107	10,700	.....	.....	.....	.....	.....	.....	.....	200	.....	.....
Epping.....	416	41,600	.....	.....	.....	.....	17	985	.....	10,700	.....	.....
Exeter.....	845	84,500	.....	.....	8	90	99	8,665	12,100	36,900	1,200	.....
Fremont.....	136	13,600	.....	.....	4	37	11	650	.....	300	.....	.....
Greenland.....	153	15,300	2	50	.....	.....	10	475	.....	21,299	.....	.....
Hampstead.....	220	22,000	.....	.....	8	57	12	750	.....	2,700	.....	.....
Hampton.....	337	33,700	.....	.....	6	30	12	680	.....	1,900	.....	.....
Hampton Falls.....	170	17,000	.....	.....	19	186	32	2,095	2,000	500	.....	.....

Kensington	151	15,100	.....	2	12	5	330	.....	3,600	.....	.....
Kingston	297	29,700	.....	.....	.....	11	685	.....	1,400	.....	.....
Londonderry	325	32,500	.....	8	70	30	1,705	100	6,400	.....	.....
Newcastle	152	15,200	.....	20	100	61	5,550	.....	1,400	30	.....
Newington	104	10,400	.....	16	122	18	1,000	.....	3,165	.....	.....
Newmarket	660	66,000	.....	4	50	35	2,172	.....	18,200	14,000	\$107,390
Newton	288	28,800	.....	4	40	24	1,200	.....	.....	.....	.....
North Hampton	206	20,600	.....	21	93	37	2,725	4,100	500	.....	.....
Northwood	364	36,400	.....	.....	.....	38	2,215	.....	8,700	.....	.....
Nottingham	263	26,300	.....	4	22	3	181	.....	1,600	.....	.....
Plaistow	233	23,300	.....	.....	.....	9	500	.....	.....	.....	.....
Portsmouth	2,685	268,500	.....	83	655	354	38,458	212,770	672,206	.....	205,000
Raymond	343	34,300	.....	.....	.....	.....	.....	.....	300	.....	.....
Rye	263	26,300	.....	.....	.....	78	5,404	.....	8,567	.....	.....
Salem	443	44,300	2	60	112	14	880	.....	1,100	.....	.....
Saundown	128	12,800	.....	5	22	5	250	.....	2,000	3,000	.....
Seabrook	389	38,900	.....	.....	.....	3	160	.....	.....	.....	.....
South Hampton	87	8,700	.....	3	23	9	520	.....	.....	.....	.....
South Newmarket	223	22,300	.....	.....	.....	20	1,412	.....	4,765	.....	.....
Stratham	167	16,700	3	95	.....	14	1,076	2,000	3,300	9,363	.....
Windham	154	15,400	.....	11	75	8	613	.....	.....	.....	.....
Totals	12,488	\$1,248,800	11	\$335	\$2,946	1033	\$85,045	\$237,070	\$852,924	\$28,593	\$312,390

TABLE No. 1.—*Continued.*
ROCKINGHAM COUNTY.

TOWNS.	Money on hand, at interest, or on deposit.	Stock in trade.	Mills and their machinery.	Lands and buildings.	Amount of in- ventory.	Amount of taxes.	Rate per cent.
Atkinson	\$15,989	\$6,165	\$600	\$240,640	\$302,994	\$3,241.84	1.07
Auburn	7,280	6,035	3,450	219,661	273,514	3,010.95	1.10
Brentwood	12,425	18,150	13,550	210,110	311,582	3,115.82	1.00
Candia	3,035	9,000	1,050	278,527	352,338	5,508.51	1.56
Chester	9,765	7,730	4,300	293,465	372,301	4,021.14	1.08
Danville .....	.....	9,200	2,150	158,312	200,990	2,713.36	1.35
Deerfield	15,576	6,480	4,000	329,226	443,296	5,884.00	1.33
Derry	11,240	42,960	.....	805,238	1,004,978	22,738.13	2.26
East Kingston	2,500	13,700	4,800	183,314	231,109	3,403.30	1.50
Epping	18,746	63,250	16,100	509,629	699,478	10,515.66	1.50
Exeter	* 435,450	148,150	120,000	1,898,220	2,802,837	46,246.81	1.65
Fremont .....	.....	40,650	10,300	179,240	260,162	2,758.42	1.06
Greenland	7,000	600	3,100	298,462	373,842	4,486.18	1.20
Hampstead	11,200	15,035	6,100	274,361	353,130	4,237.29	1.20
Hampton	15,400	8,450	150	567,475	656,576	8,207.20	1.25
Hampton Falls	4,122	3,550	2,770	232,874	293,069	3,820.83	1.30
Kensington	3,500	3,692	450	215,132	266,836	3,393.60	1.27
Kingston	12,430	13,785	2,200	279,680	361,521	5,423.78	1.50

Londonderry	11,229	38,150	6,600	413,688	570,294	8,098.17	1.42
Newcastle .....	.....	3,362	.....	169,384	201,964	3,023.54	1.49
Newington	2,750	400	.....	179,466	218,299	2,299.87	1.05
Newmarket	16,527	.....	364,910	616,064	1,234,560	19,752.96	1.60
Newton	3,755	30,259	3,150	295,723	382,072	6,344.89	1.66
North Hampton	5,800	4,050	2,757	523,226	596,945	6,579.84	1.10
Northwood	27,343	18,000	2,800	394,112	524,259	8,740.18	1.67
Nottingham	6,300	26,165	12,840	247,045	348,844	5,581.50	1.60
Plaistow	1,850	18,610	.....	242,126	307,474	4,612.11	1.50
Portsmouth	225,846	639,769	.....	5,205,907	7,585,778	145,646.98	1.92
Raymond	2,794	19,377	.....	276,675	371,314	4,857.70	1.31
Rye	1,700	3,800	5,300	506,582	589,653	7,308.80	1.24
Salem .....	.....	27,330	12,500	498,846	624,864	10,622.79	1.70
Sandown	2,300	3,150	2,940	128,930	166,741	2,251.66	1.36
Seabrook	1,800	3,950	1,200	206,547	262,775	5,912.44	2.25
South Hampton	800	7,200	1,000	188,932	218,563	3,169.16	1.45
South Newmarket	13,578	15,800	21,216	279,450	372,701	3,675.00	.99
Stratham	17,050	22,570	3,827	402,428	519,853	4,788.00	.92
Windham	5,600	11,246	8,000	285,280	353,588	4,030.92	1.14
Totals	\$932,680	\$1,309,770	\$644,610	\$18,234,527	\$25,011,097	\$400,082.33	

* Including \$357,100 doorage.

TABLE No. 1.—*Continued.*
STRAFFORD COUNTY.

TOWNS.	POLLS.		ASSES AND MULES.		HOGS.		CARRIAGES.		Stock in public funds.	Stock in banks and other cor- porations in this State.	Stock in corpo- rations out of this State.	Surplus capital of banking in- stitutions.
	Number.	Valuation.	Number.	Valuation.	Number.	Valuation.	Number.	Valuation.				
Barrington.....	317	\$31,700	.....	.....	6	\$36	2	\$100	\$1,000	\$6,800	.....	\$474
Dover.....	3,327	332,700	.....	.....	57	576	179	19,523	27,700	234,100	.....	84,988
Durham.....	233	23,300	.....	.....	5	60	21	1,400	101,250	28,200	.....	700
Farmington.....	802	80,200	.....	.....	.....	.....	62	4,695	.....	27,000	.....	.....
Lee.....	178	17,800	.....	.....	3	24	4	270	3,000	7,100	.....	.....
Madbury.....	100	10,000	.....	.....	5	48	9	680	.....	14,500	.....	.....
Middleton.....	77	7,700	.....	.....	1	4	.....	.....	.....	.....	.....	.....
Milton.....	427	42,700	.....	.....	.....	.....	21	1,245	.....	10,300	.....	.....
New Durham.....	190	19,000	7	\$450	5	30	10	675	.....	.....	.....	.....
Rochester.....	2,125	212,500	1	40	15	140	41	4,010	700	91,100	\$100	1,276
Rollinsford.....	453	45,300	.....	.....	1	10	26	1,500	.....	34,100	.....	12,000
Somersworth.....	1,364	136,400	.....	.....	..	.....	70	6,780	.....	155,200	.....	52,000
Strafford.....	314	31,400	.....	.....	.....	.....	.....	375	.....	2,000	.....	.....
Totals.....	9,907	\$990,700	8	\$490	98	\$928	445	\$41,253	\$133,650	\$610,400	\$100	\$151,438

STAFFORD COUNTY.

TOWNS.	Money on hand, at interest, or on deposit.	Stock in trade.	Mills and their machinery.	Lands and buildings.	Amount of in- ventory.	Amount of taxes.	Rate per cent.
Barrington.....	\$2,380	\$33,525	\$11,300	\$334,886	\$468,714	\$12,177.62	2.60
Dover	251,555	1,263,070	1,202,678	5,565,508	9,105,206	163,893.70	1.80
Durham	11,394	8,300	1,650	337,328	544,504	5,990.00	1.10
Farmington	94,807	67,100	.....	991,510	1,325,937	81,873.95	2.40
Lee	15,100	15,200	2,800	212,000	306,000	3,763.80	1.23
Madbury	30,543	6,570	.....	178,423	262,765	2,312.29	.88
Middleton .....	.....	.....	.....	81,860	97,051	2,038.07	2.10
Milton	26,800	21,800	27,550	415,830	580,220	10,741.38	1.85
New Durham	1,000	1,800	4,500	182,667	234,814	3,876.74	1.65
Rochester	23,246	454,500	318,330	2,388,800	3,595,612	71,953.46	2.00
Rollinsford	45,430	61,533	404,334	553,178	1,182,265	12,568.09	1.06
Somersworth .....	.....	239,200	917,000	1,364,940	2,904,780	52,875.24	1.82
Stafford	1,900	8,375	1,150	384,226	477,626	8,940.17	1.87
Totals	\$504,755	\$2,180,973	\$2,891,292	\$12,991,216	\$21,085,494	\$383,004.51	

TABLE No. 1. — *Continued.*
BELKNAP COUNTY.

TOWNS.	FOLLS.		ASSES AND MULES.		HOGS.		CARRIAGES.		Stock in public funds.	Stock in banks and other corporations in this State.	Stock in corporations out of this State.	Surplus capital in banking institutions.
	Number.	Valuation.	Number.	Valuation.	Number.	Valuation.	Number.	Valuation.				
Alton.....	403	\$10,300	.....	.....	.....	.....	11	\$825	.....	\$4,700	.....	.....
Barnstead.....	335	33,500	.....	.....	2	\$20	18	1,245	.....	325	.....	.....
Belmont.....	306	30,600	.....	.....	1	6	10	560	\$300	11,650	.....	.....
Centre Harbor.....	142	14,200	1	\$50	16	118	36	2,834	.....	550	.....	.....
Gilford.....	926	92,600	.....	.....	11	84	44	3,234	4,200	12,600	\$90	.....
Gilmanton.....	281	28,100	.....	.....	2	14	4	360	.....	8,500	.....	.....
Laconia.....	1,747	174,700	.....	.....	40	210	108	8,182	.....	124,700	5,200	\$140,198
Meredith.....	429	42,900	.....	.....	31	175	16	1,225	2,300	7,100	.....	.....
New Hampton.....	218	21,800	.....	.....	20	135	1	75	.....	300	.....	.....
Sanbornton.....	254	25,400	.....	.....	8	46	6	356	.....	1,400	500	.....
Tilton.....	372	37,200	2	250	7	65	48	4,240	2,200	30,100	100	.....
Totals.....	5,413	\$541,300	3	\$300	138	\$873	302	\$23,130	\$9,200	\$201,925	\$5,890	\$140,198

BELKNAP COUNTY.

TOWNS.	Money on hand, at interest, or on deposit.	Stock in trade.	Mills and their machinery.	Land s and buildings.	Amount of in- ventory.	A m o u n t o f taxes.	Rate per cent.
Alton	\$11,700	\$12,880	\$3,100	\$415,659	\$543,366	\$10,486.96	1.93
Barnstead	5,880	5,275	4,900	398,317	507,417	8,121.00	1.60
Belmont	18,316	17,784	25,100	365,176	510,136	6,631.77	1.30
Centre Harbor	5,256	11,076	.....	173,767	225,721	2,003.52	.89
Gilford	32,418	49,710	34,600	1,100,934	1,382,306	29,085.79	2.10
Gilmanton	3,904	7,475	7,600	412,956	531,223	9,254.72	1.74
Laconia	62,038	194,360	267,800	1,911,332	2,945,770	60,204.72	2.04
Meredith	20,780	22,380	6,800	457,899	613,178	12,513.07	2.04
New Hampton	5,950	7,480	.....	232,205	303,954	4,893.66	1.61
Sanbornton	5,240	2,530	.....	270,530	358,560	5,378.40	1.50
Tilton	52,750	51,450	44,200	499,885	755,588	10,694.36	1.42
Totals	\$224,232	\$382,400	\$394,100	\$6,238,660	\$8,677,219	\$159,267.97	

TABLE No. 1. — Continued. CARROLL COUNTY.

TOWNS.	POLLS.		ASSES AND MULES.		HOGS.		CARRIAGES.		Stock in public funds.	Stock in banks and other corporations in this State.	Stock in corporations out of this State.	Surplus capital of banking institutions.
	Number.	Valuation.	Number.	Valuation.	Number.	Valuation.	Number.	Valuation.				
Albany	118	\$11,800	..	..	..	..	..	..	..	..	..	..
Bartlett	382	38,200	..	..	5	\$46	..	\$2,936	..	..	..	..
Brookfield	99	9,900	..	..	7	54	1	66	..	..	..	..
Chatham	75	7,500	..	..	..	..	..	..	..	..	..	..
Conway	771	77,100	..	..	7	48	66	4,576	..	..	..	..
Eaton	130	13,000	..	..	..	..	1	74	..	..	..	\$1,300
Efingham	168	16,800	..	..	..	..	..	..	..	\$400	..	..
Freedom	195	19,500	..	..	9	65	18	1,150	\$1,500	3,000	..	..
Hart's Location	17	1,700	..	..	..	..	..	..	..	2,000	..	..
Jackson	140	14,000	..	..	13	104	53	4,400	..	..	..	..
Madison	127	12,700	..	..	..	..	2	132	..	..	..	..
Moultonborough	283	28,300	..	..	..	..	3	150	..	..	..	..
Ossipee	432	43,200	..	..	6	54	15	926	..	2,000	..	..
Sandwich	334	33,400	..	..	6	36	23	1,350	..	..	..	..
Tamworth	274	27,400	3	\$100	3	20	27	1,822	..	..	..	..
Tuftonborough	194	19,400	..	..	2	20	1	80	..	700	..	..
Wakefield	405	40,500	..	..	..	..	22	1,386	..	4,600	..	..
Wolfeborough	728	72,800	4	240	13	105	60	3,504	..	43,500	\$72	10,000
Totals	4,872	\$487,200	7	\$340	71	\$552	292	\$22,542	\$1,500	\$56,200	\$72	\$11,300

CARROLL COUNTY.

TOWNS.	Money on hand, at interest, or on deposit.	Stock in trade.	Mills and their machinery.	Land s and buildings.	Amount of in- ventory.	Amount of taxes.	Rate per cent.
Albany.....	.....	.....	\$5,400	\$69,808	\$87,052	\$3,037.76	3.49
Bartlett.....	\$1,534	\$22,724	14,600	248,310	358,860	7,124.62	1.98
Brookfield.....	1,274	3,170	1,000	95,734	128,182	2,133.46	1.68
Chatham.....	.....	.....	1,700	70,339	95,609	1,807.67	1.95
Conway.....	15,550	60,120	26,800	562,290	807,794	17,372.17	2.15
Eaton.....	2,136	4,600	1,400	97,344	134,796	2,992.01	2.22
Effingham.....	3,400	6,000	7,525	171,395	232,036	6,195.36	1.67
Freedom.....	3,450	11,080	1,700	211,295	289,634	4,874.31	1.69
Hart's Location.....	5,200	1,000	1,800	12,300	25,410	160.08	.63
Jackson.....	6,950	3,890	.....	184,074	240,860	5,419.35	2.25
Madison.....	2,700	4,280	950	104,032	141,284	3,164.20	2.24
Moultonborough.....	4,550	14,876	.....	258,474	338,985	5,772.74	1.70
Ossipee.....	3,800	35,384	14,040	376,946	527,544	14,665.73	2.78
Sandwich.....	23,666	15,508	600	335,920	474,514	11,293.43	2.38
Tamworth.....	45,674	15,000	4,100	261,758	397,352	10,092.74	2.54
Tuftonborough.....	1,800	2,986	5,900	197,018	258,114	5,573.41	2.16
Wakefield.....	49,054	31,710	17,770	425,240	608,760	9,740.16	1.60
Wolfeborough.....	13,510	50,860	6,850	917,180	1,181,090	22,993.66	1.95
Totals.....	\$184,248	\$283,188	\$112,135	\$4,599,457	\$6,327,876	\$134,482.86	

TABLE No. 1.—Continued.
MERRIMACK COUNTY.

TOWNS,	POLLS.		ASSES AND MULES.		HOGS.		CARRIAGES.		Stock in public funds.	Stock in banks and other corporations in this State.	Stock in corporations out of this State.	Surplus capital of banking institutions.
	Number.	Valuation.	Number.	Valuation.	Number.	Valuation.	Number.	Valuation.				
Alleenstown	306	\$30,600	.....	.....	.....	.....	8	\$612	.....	\$1,400	.....	.....
Andover	307	30,700	.....	.....	9	\$74	15	856	.....	20,900	.....	.....
Boscawen	343	34,300	.....	.....	11	82	23	1,495	\$8,500	1,500	\$3,500	\$1,100
Bow	190	19,000	.....	.....	8	84	.....	.....	.....	6,200	.....	.....
Bradford	242	24,200	.....	.....	7	54	43	2,100	.....	6,330	5,085	.....
Canterbury	235	23,500	.....	.....	5	25	.....	.....	9,400	200	.....	.....
Chichester	176	17,600	.....	.....	5	38	.....	.....	.....	13,000	.....	.....
Concord	4,228	422,800	1	\$40	87	482	277	27,310	119,495	264,184	3,600	241,009
Daubury	171	17,100	.....	.....	4	22	2	100	.....	.....	.....	.....
Dunbarton	136	13,600	.....	.....	11	118	.....	.....	2,000	4,900	.....	.....
Epsom	231	23,100	.....	.....	5	27	9	560	750	3,600	.....	.....
Franklin	1,090	109,000	.....	.....	19	113	48	3,838	3,300	41,200	.....	.....
Henniker	358	35,800	.....	.....	18	113	34	1,720	500	5,300	4,400	.....
Hill	134	13,400	.....	.....	11	49	.....	.....	.....	1,000	.....	.....
Hooksett	376	37,600	1	125	27	159	11	800	.....	7,000	.....	.....
Hopkinton	406	40,600	1	40	23	194	30	2,414	2,400	17,724	2,618	574
London	304	30,400	.....	.....	17	99	10	585	950	2,300	.....	.....
Newbury	133	13,300	.....	.....	3	28	12	518	2,500	3,060	.....	.....

New London.....	192	19,200	.....	2	18	19	1,185	10,300	1,800	1,200	.....
Northfield	261	26,100	.....	3	22	8	560	800	2,400	.....	.....
Pembroke.....	767	76,700	6	532	54	32	1,882	15,000	12,000	4,500	.....
Pittsfield	548	54,800	.....	18	110	71	4,235	.....	7,100	.....	11,100
Salisbury	170	17,000	.....	.....	.....	.....	.....	.....	400	.....	.....
Sutton.....	219	21,900	.....	10	60	18	1,218	2,000	1,400	.....	.....
Warner.....	357	35,700	.....	7	48	32	1,867	.....	8,100	300	234
Webster.....	150	15,000	.....	8	58	5	335	3,000	.....	.....	.....
Wilmot	180	18,000	2	300	8	13	794	.....	.....	.....	.....
Totals.....	12,210	\$1,221,000	11	\$1,037	2,139	720	\$54,984	\$180,895	\$432,998	\$25,203	\$254,017

MERRIMACK COUNTY.

TOWNS.	Money on hand, at interest, or on deposit.	Stock in trade.	Mills and their machinery.	Lands and buildings.	Amount of in- ventory.	A m o u n t o f taxes.	Rate per cent.
Allenstown	\$20,000	\$35,265	\$238,000	\$303,940	\$642,361	\$5,781.04	.90
Andover	16,686	28,302	12,400	318,778	471,006	4,427.46	.94
Boscawen	20,400	62,350	55,000	476,803	658,821	8,294.35	1.25
Bow	27,401	17,050	44,350	277,576	418,955	3,354.77	.80
Bradford	41,029	17,075	5,400	290,186	445,364	4,448.56	1.00
Canterbury	13,292	6,310	.....	396,134	489,546	5,442.31	1.11
Chichester	2,529	3,300	1,000	216,787	293,436	4,292.08	1.46
Concord	621,980	818,909	97,450	8,002,068	10,786,507	190,309.88	1.76
Danbury	8,590	8,100	3,400	169,374	233,354	2,565.14	1.10
Dunbarton	11,286	17,960	2,000	259,585	345,616	3,358.83	.97
Epsom	2,300	12,005	5,500	254,179	344,880	5,349.47	1.55
Franklin	7,289	218,450	548,050	1,129,543	2,126,117	35,506.15	1.67
Henniker	22,451	17,750	37,000	449,367	667,012	10,484.21	1.57
Hill	3,600	5,200	4,500	123,814	170,918	2,136.47	1.25
Hooksett	5,170	21,248	108,500	462,807	678,803	7,536.07	1.11
Hopkinton	51,139	19,906	25,750	649,374	879,433	11,078.92	1.25
Loudon	11,884	7,180	.....	403,702	513,470	7,188.58	1.40
Newbury	12,568	10,975	2,200	201,720	279,098	3,015.29	1.08
New London	44,326	7,200	.....	224,250	350,745	5,189.94	1.48

Northfield	9,778	26,995	32,650	384,054	512,262	7,719.98	1.50
Pembroke	42,986	74,550	224,400	697,486	1,201,022	10,568.95	.88
Pittsfield	14,635	61,625	87,700	795,695	1,094,870	21,459.45	1.96
Salisbury	6,300	3,400	3,700	234,604	300,928	5,175.94	1.72
Sutton	18,395	10,740	1,250	232,238	350,292	4,390.32	1.25
Warner	48,308	19,000	.....	506,757	680,536	8,370.59	1.23
Webster	24,106	10,800	5,250	206,335	298,577	2,508.88	.84
Wilmot	4,300	8,100	5,300	172,424	242,862	4,007.22	1.65
Totals	\$1,112,728	\$1,559,745	\$1,550,750	\$17,859,580	\$25,476,791	\$383,960.85	

TABLE No. 1.—Continued.
HILLSBOROUGH COUNTY

TOWNS.	POLLS.		ASSES AND MULES.		HOGS.		CARRIAGES.		Stock in public funds.	Stock in banks and other corporations in this State.	Stock in corporations out of this State.	Surplus capital of banking institutions.
	Number.	Valuation.	Number.	Valuation.	Number.	Valuation.	Number.	Valuation.				
Amherst.....	260	\$26,000	.....	.....	7	\$58	29	\$2,310	\$1,200	\$4,500	\$1,500	.....
Antrim.....	375	37,500	.....	.....	6	53	13	810	.....	11,500	.....	.....
Bedford.....	297	29,700	.....	.....	31	220	18	1,350	.....	1,000	.....	.....
Bennington.....	185	18,500	.....	.....	.....	.....	3	200	.....	4,450	.....	.....
Brookline.....	197	19,700	.....	.....	6	50	25	1,565	.....	940	.....	.....
Deering.....	133	13,300	.....	.....	.....	.....	2	160	1,900	2,000	.....	.....
Francetown.....	217	21,700	.....	.....	6	42	21	1,522	1,700	11,624	.....	\$14,924
Goffstown.....	498	49,800	.....	.....	22	152	42	2,312	.....	11,100	1,000	5,146
Greenfield.....	157	15,700	.....	.....	6	36	13	915	.....	1,750	.....	.....
Greenville.....	340	34,000	.....	.....	4	36	31	1,675	.....	.....	.....	.....
Hancock.....	189	18,900	.....	.....	9	57	5	340	200	12,300	.....	.....
Hillsborough.....	642	64,200	3	\$180	12	120	20	1,510	.....	7,800	1,000	10,000
Hollis.....	275	27,500	2	100	9	80	14	1,030	400	24,210	.....	.....
Hudson.....	310	31,000	1	40	11	74	8	712	.....	16,148	600	1,850
Litchfield.....	77	7,700	2	175	.....	.....	6	375	.....	17,900	.....	.....
Lyndeborough.....	158	15,800	.....	.....	2	16	.....	.....	.....	1,000	1,000	.....
Manchester.....	10,673	1,067,300	.....	.....	85	572	...	53,590	4,400	301,700	.....	172,018
Mason.....	154	15,400	.....	.....	3	42	14	1,010	.....	.....	.....	.....

Merrimack	219	21,900	.....	.....	3	25	6	430	.....	10,760	.....	.....
Milford	761	76,100	.....	.....	17	145	115	8,460	.....	58,700	.....	.....
Mont Vernon	135	13,500	1	16	12	48	20	1,510	.....	300	.....	.....
Nashua	5,241	524,100	.....	.....	6	30	.....	24,960	34,814	205,636	18,200	58,500
New Boston	273	27,300	.....	.....	327	3,149	10	710	2,000	4,000	800	.....
New Ipswich	220	22,000	.....	.....	.....	.....	11	1,112	.....	.....	.....	.....
Pelham	204	20,400	.....	.....	38	295	15	945	.....	2,800	.....	.....
Peterborough	600	60,000	.....	.....	41	360	57	3,885	11,100	52,900	12,000	27,315
Sharon	36	3,600	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Temple	77	7,700	.....	.....	6	48	.....	.....	1,000	1,700	.....	.....
Weare	434	43,400	.....	.....	9	78	25	1,465	.....	4,500	.....	.....
Wilton	415	41,500	.....	.....	86	836	58	4,600	2,900	7,820	1,700	3,000
Windsor	14	1,400	.....	.....	1	8	.....	.....	.....	.....	.....	.....
Totals	23,766	\$2,376,600	9	\$511	765	\$6,630	581	\$119,463	\$63,414	\$779,032	\$37,800	\$292,753

TABLE No. 1. — *Continued.*
HILLSBOROUGH COUNTY.

TOWNS.	Money on hand, on deposit, or interest.	Stock in trade.	Mills and their machinery.	Lands and buildings.	Amount of in- ventory.	Amount of taxes.	Rate per cent.
Amherst.....	\$19,906	\$8,310	\$7,450	\$515,326	\$638,640	\$7,853.54	1.23
Antrim	34,497	53,250	29,500	317,745	527,798	11,563.52	2.19
Bedford	66,812	8,240	2,600	459,589	633,258	5,699.32	.90
Bennington	12,225	16,900	.....	170,950	234,730	3,876.03	1.65
Brookline.....	21,915	14,235	11,185	212,594	298,829	3,377.47	1.13
Deering	3,200	1,135	300	158,027	205,402	3,578.92	1.74
Francetown.....	17,530	8,780	4,000	313,372	429,630	5,286.26	1.23
Goffstown	120,576	42,250	6,600	835,051	1,135,365	13,568.17	1.19
Greenfield	5,750	13,870	.....	188,187	253,140	4,809.92	1.90
Greenville	19,160	55,550	256,700	311,090	695,604	7,583.08	1.09
Hancock.	4,485	4,650	2,100	240,545	319,070	5,221.28	1.63
Hillsborough	23,700	85,650	52,380	667,500	984,918	16,530.06	1.68
Hollis	* 35,060	11,690	9,500	489,685	656,680	6,566.80	1.00
Hudson	20,770	6,380	500	530,845	648,755	7,780.65	1.20
Litchfield	18,572	16,930	860	162,425	240,549	1,250.83	.52
Lyndeborough	2,850	8,200	2,190	222,068	283,976	3,975.46	1.40
Manchester	203,676	2,355,780	6,649,000	14,910,978	25,932,044	505,679.17	1.95
Mason.....	19,814	19,100	3,800	261,765	342,008	3,977.20	1.16

Merrimack.....	1,700	13,950	20,350	462,045	562,650	6,685.57	1.19
Milford.....	160,603	112,125	151,150	1,132,180	1,771,943	24,807.33	1.40
Mont Vernon.....	12,500	1,000	800	242,032	293,662	3,641.40	1.24
Nashua.....	163,316	983,512	2,514,800	7,443,296	12,085,629	216,901.98	1.79
New Boston.....	39,137	29,500	9,650	413,021	585,825	8,035.86	1.38
New Ipswich.....	3,356	12,576	106,300	374,280	547,376	8,209.64	1.50
Pelham.....	17,106	12,220	10,200	382,975	488,308	3,906.46	.80
Peterborough.....	134,314	82,867	138,600	852,154	1,429,784	16,442.51	1.50
Sharon.....	200	500	900	57,960	68,126	1,087.85	1.59
Temple.....	7,904	1,330	1,000	132,956	175,286	2,340.30	1.33
Weare.....	36,119	21,936	14,450	514,141	707,112	9,333.87	1.32
Wilton.....	56,808	52,122	26,450	668,561	914,068	13,711.02	1.50
Windsor.....	1,700	3,200	1,200	30,879	41,740	412.29	.99
Totals	\$1,285,261	\$4,059,738	\$10,034,515	\$33,674,222	\$54,131,995	\$933,743.76	

* Including \$4,000 doorage.

TABLE No. 1. — *Continued.*
CHESHIRE COUNTY.

TOWNS.	POLLS.		ASSES AND MULES.		HOGS.		CARRIAGES.		Stock in public funds.	Stock in banks and other corporations in this State.	Stock in corporations out of this State.	Surplus capital of banking institutions.
	Number.	Valuation.	Number.	Valuation.	Number.	Valuation.	Number.	Valuation.				
Alstead	212	\$21,200	.....	.....	7	\$50	15	\$1,230	\$950	\$25,000	\$1,000	.....
Chesterfield	294	29,400	.....	.....	15	106	15	775	.....	4,400	.....	.....
Dublin	125	12,500	.....	.....	5	41	54	4,780	3,200	8,300	700	.....
Fitzwilliam	277	27,700	.....	.....	21	210	29	2,120	600	5,075	.....	.....
Gilsom	190	19,000	.....	.....	3	28	27	1,915	.....	5,500	2,100	.....
Harrisville	170	17,000	.....	.....	12	88	20	1,305	.....	1,100	.....	.....
Hinsdale	584	58,400	.....	.....	1	6	5	330	21,150	2,000	.....	.....
Jaffrey	328	32,800	.....	.....	11	100	40	3,236	6,800	60,650	.....	\$13,000
Keeper	2,027	202,700	.....	.....	20	156	173	15,271	198,780	458,200	.....	231,762
Marlborough	451	45,100	.....	.....	10	100	36	2,662	11,851	6,800	.....	.....
Marlow	151	15,100	.....	.....	29	244	11	896	2,100	29,900	.....	.....
Nelson	66	6,600	.....	.....	.....	.....	3	180	.....	.....	.....	.....
Richmond	141	14,100	.....	.....	5	30	4	215	.....	500	.....	.....
Rindge	299	29,900	.....	.....	109	1,121	50	2,210	.....	7,100	.....	.....
Roxbury	34	3,400	.....	.....	.....	.....	2	130	.....	.....	.....	.....
Stoddard	96	9,600	.....	.....	.....	.....	2	100	.....	4,500	.....	.....
Sullivan	79	7,900	.....	.....	.....	.....	10	605	.....	9,800	.....	.....
Surry	80	8,000	2	\$200	18	124	9	770	.....	500	.....	.....

Swanzy	422	42,200	.....	8	35	41	2,615	1,650	5,100	.....	.....
Troy	290	29,000	.....	.....	.....	30	1,905	.....	700	.....	.....
Walpole	672	67,200	.....	70	488	26	1,804	.....	86,000	16,368	.....
Westmoreland	253	25,300	.....	36	267	11	685	2,000	4,400	300	.....
Winchester	743	74,300	.....	27	221	27	1,965	4,000	76,179	.....	35,579
Totals	7,994	\$799,400	2	\$200	\$3,415	620	\$9,604	\$253,081	\$751,704	\$20,468	\$280,341

TABLE No. 1. — *Continued.*
CHESHIRE COUNTY.

TOWNS.	Money on hand, at interest, or on deposit.	Stock in trade.	Mills and their machinery.	Lands and buildings.	Amount of in- ventory.	Amount of taxes.	Rate per cent.
Alstead	\$24,734	\$20,550	\$11,550	\$355,328	\$509,319	\$6,111.84	1.20
Chesterfield	33,423	9,955	7,870	517,406	658,659	8,165.37	1.24
Dublin	44,174	9,250	1,250	396,500	507,519	5,379.82	1.06
Fitzwilliam	26,814	27,925	14,150	337,880	473,779	5,116.81	1.08
Gilsum	10,148	20,985	25,000	171,164	280,447	4,193.00	1.49
Harrisville	800	32,651	47,900	183,235	304,909	4,639.03	1.52
Hinsdale .....	.....	116,875	102,000	661,530	1,002,042	17,535.88	1.75
Jaffrey	61,100	55,916	41,000	489,988	809,834	9,718.01	1.20
Keene	437,859	461,450	162,750	4,068,792	6,359,066	86,895.93	1.36
Marlborough	37,503	29,602	36,600	412,464	619,196	7,431.04	1.20
Marlow	27,280	7,000	4,750	163,808	286,168	1,530.93	.54
Nelson	1,090	1,500	5,125	110,322	138,745	1,956.56	1.41
Richmond	5,155	15,065	11,450	164,610	229,889	3,172.46	1.38
Rindge	15,950	8,625	.....	403,757	506,977	5,069.77	1.00
Roxbury	2,250	.....	.....	57,044	69,034	897.44	1.30
Stoddard	2,874	2,350	3,800	138,958	175,786	3,198.90	1.82
Sullivan	5,195	2,295	4,400	93,085	145,003	1,899.56	1.31
Surry	4,611	300	2,900	114,520	151,583	1,604.79	1.05

Swansey	23,870	41,200	54,200	505,235	721,277	10,097.94	1.40
Troy	13,759	41,320	53,100	295,705	459,799	5,888.18	1.28
Walpole	138,158	68,026	1,000	1,081,790	1,522,164	19,159.12	1.25
Westmoreland	39,805	8,300	2,070	351,536	495,967	4,265.31	.86
Winchester	52,163	130,385	112,750	895,785	1,444,338	22,417.29	1.55
Totals	\$1,008,715	\$1,111,525	\$705,615	\$11,970,442	\$17,871,500	\$236,394.98	

TABLE No. 1. — *Continued.*
SULLIVAN COUNTY.

TOWNS.	POLLS.		ASSES AND MULES.		HOGS.		CARRIAGES.		Stock in public funds.	Stock in banks and other corporations in this State.	Stock in corporations out of this State.	Surplus capital in banking institutions.
	Number.	Valuation.	Number.	Valuation.	Number.	Valuation.	Number.	Valuation.				
Acworth.....	166	\$16,600	.....	.....	23	\$148	.....	.....	.....	\$5,100	.....	.....
Charlestown.....	388	38,800	.....	.....	41	298	.....	\$1,310	\$5,650	59,500	.....	\$1,127
Claremont.....	1,269	126,900	.....	.....	53	550	129	11,200	1,000	80,800	.....	25,000
Cornish.....	224	22,400	.....	.....	62	608	.....	500	2,000	3,600	.....	.....
Croydon.....	115	11,500	.....	.....	4	24	4	300	.....	5,580	.....	.....
Goshen.....	99	9,900	.....	.....	4	22	.....	.....	1,000	4,100	.....	.....
Granham.....	102	10,200	.....	.....	10	79	.....	.....	.....	500	.....	.....
Langdon.....	95	9,500	2	\$120	18	120	.....	.....	5,000	6,200	.....	.....
Leipster.....	132	13,200	1	2	6	40	4	236	1,200	.....	\$1,100	.....
Newport.....	720	72,000	4	400	24	154	35	3,042	4,400	86,978	.....	.....
Plainfield.....	276	27,600	.....	.....	43	368	14	942	.....	8,788	.....	.....
Springfield.....	131	13,100	.....	.....	.....	.....	2	135	.....	1,010	.....	.....
Sunapee.....	262	26,200	.....	.....	3	22	14	912	4,100	10,212	.....	.....
Unity.....	151	15,100	.....	.....	24	165	.....	.....	.....	2,750	.....	.....
Washington.....	154	15,400	.....	.....	1	8	8	534	.....	250	.....	.....
Totals.....	4,284	\$428,400	7	\$522	316	\$2,606	218	\$19,211	\$24,350	\$275,368	\$1,100	\$26,127

SULLIVAN COUNTY.

TOWNS.	Money on hand, at interest, or on deposit.	Stock in trade.	Mills and their machinery.	Land s and buildings.	Amount of in- ventory.	A m o u n t o f taxes.	Rate per cent.
Acworth.....	\$8,478	\$3,400	\$2,156	\$222,169	\$308,632	\$1,936.56	1.60
Charlestown.....	20,860	19,600	12,400	604,465	830,611	9,650.00	1.17
Claremont.....	122,490	188,970	349,950	1,775,490	2,799,054	48,981.31	1.75
Cornish.....	9,436	5,474	6,650	363,960	477,504	5,975.01	1.25
Croydon.....	9,235	2,855	.....	147,935	206,086	2,977.87	1.45
Goshen.....	1,670	4,200	.....	107,411	149,365	2,364.66	1.58
Grantham.....	3,140	6,335	.....	104,405	143,143	2,867.70	2.00
Langdon.....	18,360	786	.....	165,394	237,642	2,143.50	.90
Lempster.....	4,280	2,556	1,100	132,581	187,180	3,517.99	1.88
Newport.....	40,902	97,290	78,200	895,936	1,367,906	27,084.50	1.98
Plainfield.....	22,042	6,660	3,500	396,294	538,216	7,212.09	1.34
Springfield.....	1,425	2,800	400	113,666	157,941	4,671.45	2.95
Sunapee.....	5,882	14,324	.....	290,960	383,694	6,645.94	1.73
Unity.....	10,385	200	.....	173,033	243,422	3,602.62	1.48
Washington.....	11,264	9,210	6,800	217,750	289,914	4,348.70	1.50
Totals.....	\$289,849	\$364,660	\$465,630	\$5,711,449	\$8,320,310	\$136,932.93	

TABLE No. 1. — *Continued.*
GRAFTON COUNTY.

TOWNS.	POLLS.		ASSES AND MULES.		HOGS.		CARRIAGES.		Stock in public funds.	Stock in banks and other corporations in this State.	Stock in corporations out of this State.	Surplus capital of banking institutions.
	Number.	Valuation.	Number.	Valuation.	Number.	Valuation.	Number.	Valuation.				
Alexandria.....	182	\$18,200	.....	.....	3	\$18	9	\$330	.....	.....	.....	.....
Ashland.....	318	31,800	.....	.....	.....	.....	23	1,511	.....	\$12,000	.....	.....
Bath.....	255	25,500	.....	.....	55	412	20	1,210	.....	7,500	.....	.....
Benton.....	63	6,300	.....	.....	2	10	.....	.....	.....	.....	.....	.....
Bethlehem.....	333	33,300	12	\$360	80	496	.....	6,995	.....	1,000	.....	.....
Bridgewater.....	93	9,300	.....	.....	2	16	3	176	.....	.....	.....	.....
Bristol.....	371	37,100	.....	.....	17	154	22	1,410	.....	12,300	.....	.....
Campton.....	280	28,000	.....	.....	2	10	20	1,246	.....	3,300	.....	.....
Canaan.....	334	33,400	.....	.....	9	57	7	385	.....	3,850	.....	.....
Dorchester.....	109	10,900	.....	.....	2	12	.....	.....	.....	500	.....	.....
Easton.....	88	8,800	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Ellsworth.....	33	3,300	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Enfield.....	364	36,400	.....	.....	14	100	15	985	\$7,100	8,400	.....	.....
Franconia.....	150	15,000	.....	.....	13	156	.....	3,750	.....	7,400	.....	.....
Grafton.....	214	21,400	.....	.....	11	78	3	150	.....	1,000	.....	.....
Groton.....	133	13,300	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Hanover.....	420	42,000	.....	.....	39	260	17	1,220	.....	33,500	\$4,000	.....
Haverhill.....	722	72,200	.....	.....	145	928	12	770	2,500	8,500	.....	.....

Hebron.....	70	7,000	.....	7	42	5	250	.....	.....	.....	.....
Holderness.....	151	15,100	3	60	12	62	13	796	.....	.....	.....
Landaff.....	127	12,700	.....	.....	17	114	2	124	500	3,000	.....
Lebanon.....	1,172	117,200	.....	.....	68	465	76	5,146	11,200	74,500	\$16,400
Lincoln.....	29	2,900	.....	.....	.....	.....	.....	.....	.....	.....	.....
Lisbon.....	548	54,800	.....	.....	38	246	35	3,370	.....	.....	1,000
Littleton.....	839	83,900	.....	.....	54	322	56	4,368	.....	84,400	15,000
Livermore.....	17	1,700	.....	.....	20	100	.....	.....	.....	.....	.....
Lyman.....	149	14,900	.....	.....	31	216	.....	.....	.....	.....	.....
Lyme.....	288	28,800	2	100	37	271	3	220	.....	.....	.....
Monroe.....	119	11,900	.....	.....	19	134	6	390	.....	1,500	.....
Orange.....	62	6,200	.....	.....	.....	.....	.....	.....	.....	.....	.....
Orford.....	236	23,600	2	200	44	310	6	300	500	600	.....
Piermont.....	185	18,500	.....	.....	46	320	6	300	.....	.....	.....
Plymouth.....	452	45,200	.....	.....	11	92	44	2,870	.....	26,100	.....
Runney.....	253	25,300	.....	.....	12	48	3	175	.....	1,000	.....
Thornton.....	167	16,700	.....	.....	.....	.....	6	300	.....	.....	.....
Warren.....	239	23,900	.....	.....	10	115	28	1,570	.....	200	.....
Waterville.....	7	700	.....	.....	.....	.....	2	100	.....	.....	.....
Wentworth.....	207	20,700	.....	.....	6	40	.....	.....	500	.....	.....
Woodstock.....	103	10,300	.....	.....	3	18	22	1,798	.....	3,400	.....
Totals.....	9,882	\$988,200	19	\$720	829	\$5,622	464	\$42,516	\$22,300	\$293,950	\$39,677	\$32,400

TABLE No. 1. — Continued.
GRAFTON COUNTY.

TOWNS.	Money on hand, at interest, or on deposit.	Stock in trade.	Mills and their machinery.	Land and buildings.	Amount of in- ventory.	Amount of taxes.	Rate per cent.
Alexandria	\$15,900	\$3,350	\$3,690	\$148,314	\$224,465	\$4,791.90	2.13
Ashland	5,500	42,326	51,400	293,151	464,105	6,975.61	1.50
Bath	6,666	5,236	5,300	403,030	524,330	8,886.38	1.69
Benton .....	.....	2,750	500	73,324	96,080	2,012.92	2.09
Bethlehem	8,250	36,160	22,900	547,404	706,989	13,388.22	1.89
Bridgewater	710	2,076	.....	86,671	115,833	2,664.10	2.30
Bristol	14,650	58,750	82,550	424,680	668,542	13,764.13	2.06
Caumpton	5,600	12,750	10,900	234,196	345,250	8,286.00	2.40
Canaan	21,710	29,234	15,825	364,646	516,959	8,553.01	1.65
Dorchester .....	.....	6,520	300	83,542	118,086	3,542.58	3.00
Easton	300	14,904	8,550	65,480	113,839	1,707.58	1.50
Ellsworth	142	.....	175	19,660	29,020	739.63	2.55
Enfield	83,960	25,250	19,000	414,290	596,315	6,489.17	1.09
Franconia	21,250	4,300	4,800	302,548	382,276	5,351.86	1.40
Grafton	19,515	10,650	8,500	197,344	295,536	3,997.49	1.35
Groton	200	2,880	4,270	79,482	115,300	2,928.27	2.54
Hanover	98,226	42,150	1,900	732,364	1,039,442	12,260.43	1.18
Haverhill	143,503	59,650	31,400	846,970	1,269,060	19,182.78	1.51

Hebron.....	2,324	.....	67,076	89,656	1,282.09	1.43
Holderness.....	2,692	1,400	178,660	226,934	3,857.88	1.70
Landaff.....	3,340	100	160,333	229,784	3,122.21	1.36
Lebanon.....	176,386	36,500	1,488,506	2,219,108	32,105.47	1.45
Lincoln.....	2,100	1,000	49,415	58,818	623.47	1.06
Lisbon.....	42,690	19,500	711,503	969,917	19,074.98	1.96
Littleton.....	123,150	.....	1,100,857	1,554,063	31,014.11	1.98
Livermore.....	15,000	.....	79,450	99,700	1,000.00	1.00
Lyman.....	2,250	4,100	133,160	189,188	2,870.47	1.52
Lyme.....	18,500	4,550	339,867	470,434	4,453.94	.94
Mouroe.....	42,956	31,550	145,818	289,828	3,333.16	1.15
Orange.....	50	250	50,150	69,045	1,748.66	2.53
Orford.....	19,020	8,690	292,325	418,334	6,970.95	1.66
Piermont.....	7,200	4,900	238,228	359,156	6,483.10	1.81
Plymouth.....	53,916	7,250	574,106	751,806	13,070.54	1.74
Runney.....	11,075	7,000	208,170	286,184	4,292.82	1.50
Thornton.....	11,003	1,025	128,328	181,799	6,472.56	3.55
Warren.....	14,825	5,700	178,100	275,314	3,579.34	1.30
Waterville.....	.....	400	37,405	40,032	961.60	1.20
Wentworth.....	9,976	3,500	148,598	213,336	4,202.71	1.97
Woodstock.....	8,272	2,150	104,876	143,066	4,224.67	2.95
Totals.....	\$929,071	\$411,525	\$11,732,007	\$16,756,929	\$280,266.79	

TABLE No. 1.—Continued. COÖS COUNTY.

TOWNS.	POLLS.		ASSES AND MULES.		HOGS.		CARRIAGES.		Stock in public funds.	Stock in banks and other corporations in this State.	Stock in corporations out of this State.	Surplus capital of banking institutions.
	Number.	Valuation.	Number.	Valuation.	Number.	Valuation.	Number.	Valuation.				
Berlin.....	1,494	\$149,400	2	\$100	7	\$56	21	\$1,223	.....	\$16,200	.....	.....
Carroll.....	225	22,500	2	60	55	234	53	3,380	.....	.....	.....	.....
Clarksville.....	71	7,100	.....	.....	7	28	.....	.....	.....	.....	.....	.....
Colebrook.....	460	46,000	.....	.....	50	171	27	1,740	\$700	42,300	.....	.....
Columbia.....	169	16,900	.....	.....	14	64	10	565	.....	1,000	.....	.....
Dalton.....	152	15,200	.....	.....	6	22	.....	.....	.....	250	.....	.....
Dummer.....	111	11,100	1	45	.....	.....	.....	.....	.....	.....	.....	.....
Errol.....	59	5,900	.....	.....	12	66	6	358	.....	.....	.....	.....
Gorham.....	482	48,200	.....	.....	11	110	40	2,814	.....	11,800	.....	.....
Jefferson.....	315	31,500	.....	.....	14	50	18	1,550	.....	.....	.....	.....
Lancaster.....	911	91,100	.....	.....	98	726	101	7,239	.....	45,600	.....	.....
Milan.....	253	25,300	.....	.....	16	84	.....	.....	.....	600	.....	.....
Northumberland.....	454	45,400	.....	.....	29	188	.....	.....	.....	8,000	.....	.....
Pittsburg.....	168	16,800	10	700	20	112	.....	.....	.....	2,000	.....	.....
Randolph.....	35	3,500	.....	.....	.....	.....	3	70	.....	.....	.....	.....
Shelburne.....	88	8,800	.....	.....	13	68	16	1,340	.....	600	.....	\$1,000
Stark.....	199	19,900	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Stewartstown.....	264	26,400	.....	.....	55	294	17	1,078	.....	1,700	.....	.....
Stratford.....	261	26,100	.....	.....	57	346	29	1,640	.....	22,800	\$8,100	2,270
Whitefield.....	561	56,100	.....	.....	53	182	54	2,726	.....	2,500	.....	.....
Totals.....	6,732	\$673,200	15	\$905	517	\$2,801	395	\$25,723	\$700	\$155,350	\$8,100	\$3,270

TABLE No. 1.—Continued. COÖS COUNTY.

TOWNS.	Money on hand, at interest, or on deposit.	Stock in trade.	Mills and their machinery.	Lands and buildings.	Amount of in- ventory.	Amount of taxes.	Rate per cent.
Berlin.....	\$14,987	\$153,232	\$256,550	\$557,651	\$1,183,184	\$20,350.76	1.72
Carroll.....	.....	48,150	20,100	196,408	312,711	4,005.21	1.30
Clarksville.....	5,290	15,530	.....	78,356	124,952	2,336.60	1.87
Colebrook.....	88,629	52,030	.....	488,085	793,113	9,329.40	1.17
Columbia.....	1,400	2,800	11,750	203,835	275,358	5,149.66	1.87
Dalton.....	.....	8,546	.....	115,745	164,077	5,742.70	3.50
Dummer.....	2,425	46,919	4,000	75,252	157,032	3,531.67	2.25
Errol.....	500	15,411	.....	82,798	117,344	2,816.37	2.40
Gorham.....	9,100	39,900	9,000	327,934	474,710	8,813.97	1.86
Jefferson.....	.....	8,804	.....	202,592	287,172	7,753.64	2.70
Lancaster.....	29,820	78,780	11,300	881,100	1,241,215	25,550.50	2.06
Milan.....	9,075	13,578	2,700	164,232	253,900	6,343.20	2.50
Northumberland.....	12,240	70,955	28,200	360,605	574,914	9,198.62	1.60
Pittsburg.....	2,749	18,430	.....	234,218	303,227	5,761.09	1.90
Randolph.....	.....	3,600	1,300	48,762	64,070	1,345.49	2.10
Shelburne.....	3,000	3,120	2,500	98,498	130,850	2,368.35	1.81
Stark.....	7,425	28,080	16,900	165,361	265,284	3,926.23	1.48
Stewartstown.....	21,435	21,200	5,200	248,015	370,619	6,448.86	1.74
Stratford.....	11,130	38,520	6,650	256,430	413,823	4,860.86	1.17
Whitefield.....	11,150	91,000	25,100	397,480	637,258	11,496.72	1.80
Totals.....	\$230,355	\$758,585	\$401,250	\$5,183,390	\$8,144,813	\$147,189.90	

TABLE No. 1. — *Continued.*
SUMMARY.

COUNTIES.	POLLS.		ASSES AND MULES.		HOGS.		CARRIAGES.		Stock in public funds.	Stock in banks and other corporations in this State.	Stock in corporations out of this State.	Surplus capital of banking institutions.
	Number.	Valuation.	Number.	Valuation.	Number.	Valuation.	Number.	Valuation.				
Rockingham	12,488	\$1,248,800	11	\$335	374	\$2,946	1,033	\$85,045	\$237,070	\$852,924	\$28,593	\$312,390
Strafford	9,907	990,700	8	490	98	928	445	41,253	133,650	610,400	100	151,438
Belknap	5,413	541,300	3	300	138	873	302	23,130	9,200	201,925	5,890	140,198
Carroll	4,872	487,200	7	340	71	552	292	22,542	1,500	56,200	72	11,300
Merrimack	12,210	1,221,000	11	1,037	326	2,139	720	54,984	180,895	432,998	25,203	254,017
Hillsborough	23,766	2,376,600	9	511	765	6,630	581	119,463	63,414	779,032	37,800	292,753
Cheshire	7,994	799,400	2	200	407	3,415	620	6,604	253,081	751,704	20,468	280,341
Sullivan	4,284	428,400	7	522	316	2,606	218	19,211	24,350	275,368	1,100	26,127
Grafton	9,882	988,200	19	720	829	5,622	464	42,516	22,300	293,950	39,677	32,400
Coös	6,732	673,200	15	905	517	2,801	395	25,723	700	155,350	8,100	3,270
Totals	97,548	\$9,754,800	92	\$5,360	3,841	\$28,512	5,070	\$140,471	\$926,160	\$4,409,851	\$107,003	\$1,504,234

SUMMARY.

COUNTIES.	Money on hand, at interest, or on deposit.	Stock in trade.	Mills and their machinery.	Lands and buildings.	Amount of in- ventory.	Amount of taxes.
Rockingham	\$932,680	\$1,309,770	\$644,910	\$18,234,527	\$25,011,097	\$100,082.33
Strafford	504,755	2,180,973	2,891,292	12,991,216	21,085,494	383,004.51
Belknap	224,232	382,400	394,100	6,238,660	8,677,219	159,267.97
Carroll	184,248	283,188	112,135	4,599,457	6,327,876	134,482.86
Merrimack	1,112,728	1,559,745	1,550,750	17,839,580	25,476,791	383,960.85
Hillsborough	1,285,261	4,059,738	10,034,515	33,674,222	54,131,995	933,743.76
Cheshire	1,008,715	1,111,525	705,615	11,970,442	17,871,500	236,394.98
Sullivan	289,849	364,660	465,630	5,711,449	8,320,310	136,932.93
Grafton	763,513	929,071	411,525	11,732,007	16,736,929	280,266.79
Coös	230,355	758,585	401,250	5,183,390	8,144,813	147,189.90
Totals	\$6,536,336	\$12,939,655	\$17,611,422	\$128,194,950	\$191,804,024	\$3,195,326.88
Deposits in savings banks (less amount invested in real estate) with tax thereon					73,098,476	730,984.76
Capital in insurance companies, with tax thereon					1,525,000	15,250.00
Amount of property taxed and taxes assessed					\$266,427,500	\$3,941,561.64
Average rate per cent, including tax on deposits in savings banks and insurance capital, 1.48.						
Amount of property taxed and taxes assessed in 1891					\$259,191,770	\$3,841,310.63
Average rate per cent in 1891, 1.48.						

TABLE No. 2.
Number, Value, and Average per Head of Horses, Cattle, and Sheep in each Town, in April, 1892.
 ROCKINGHAM COUNTY.

TOWNS.	HORSES.		Average per head.	OXEN.		Average per head.	COWS.		Average per head.	OTHER CATTLE.		Average per head.	SHEEP.		Average per head.
	No.	Value.		No.	Value.		No.	Value.		No.	Value.		No.	Value.	
Atkinson	151	\$9,070	\$60.07	20	\$900	\$45.00	499	\$11,665	\$23.38	29	\$495	\$17.07	16	\$40	\$2.50
Auburn	165	10,875	65.09	22	1,020	46.36	289	6,269	21.69	68	1,261	18.54	40	170	4.25
Brentwood	264	21,690	82.16	67	3,305	49.33	397	10,008	25.21	85	1,399	16.46	75	240	3.20
Candia	265	15,855	59.83	64	2,395	37.42	443	8,350	18.85	93	1,375	14.78	27	81	3.00
Chester	220	15,180	69.00	47	2,000	42.55	390	8,555	21.94	109	1,954	17.93	127	381	3.00
Danville	120	7,936	66.13	35	1,538	43.94	152	3,470	22.83	8	116	14.50	11	44	4.00
Deerfield	387	19,930	51.50	160	7,444	46.50	792	14,548	18.37	325	5,608	17.26	353	1,150	3.26
Derry	516	30,094	58.32	65	2,084	32.06	896	17,708	19.76	90	1,448	16.09	18	74	4.11
East Kingston	132	8,372	63.42	47	2,160	45.96	198	4,737	23.92	27	336	12.22	62	196	3.16
Epping	334	23,700	70.96	60	2,945	49.08	363	8,795	24.23	126	2,184	17.33	205	779	3.80
Exeter	535	45,335	84.74	48	2,386	49.59	397	8,575	21.60	71	984	13.86	53	213	4.02
Fremont	134	8,535	63.70	28	1,260	45.00	197	4,540	23.05	46	903	19.63	50	147	2.94
Greenland	195	10,970	56.26	61	2,646	43.38	348	12,168	34.97	86	1,248	14.51	175	472	2.70
Hampstead	228	14,355	62.96	13	515	39.62	273	5,617	20.58	26	425	16.35	4	15	3.75
Hampton	253	15,895	62.83	52	2,475	47.60	474	9,212	19.43	42	587	13.98	104	427	4.11
Hampton Falls ..	177	14,065	79.47	37	1,730	46.76	424	9,776	23.06	77	1,161	15.08	164	718	4.38

Kensington	186	10,380	55.81	64	2,770	43.28	524	9,893	18.88	74	1,122	15.15	177	765	4.32
Kingston	261	15,795	60.52	24	720	30.00	268	4,768	17.42	17	245	14.41	39	113	2.90
Londonderry	413	34,665	83.78	24	1,040	43.33	816	21,311	26.12	166	2,604	15.69	64	202	3.16
Newcastle	62	5,828	94.00	.....	.....	.....	29	1,160	40.00	.....	.....	.....	.....	.....	.....
Newington	152	8,940	58.82	27	1,025	37.96	516	10,296	19.95	38	470	12.37	88	264	3.00
Newmarket	257	16,160	62.88	53	2,330	43.96	417	9,304	22.31	80	1,182	14.77	82	271	3.30
Newton	211	13,380	63.41	16	710	44.38	190	4,605	24.24	13	220	16.92	18	80	4.44
North Hampton	230	14,058	61.12	22	1,010	45.91	691	14,770	21.37	119	1,688	14.19	407	1,408	3.46
Northwood	402	21,720	54.03	85	3,305	38.88	348	6,838	19.65	173	2,449	14.10	131	377	2.88
Nottingham	262	12,170	46.45	132	4,921	37.28	442	8,957	20.26	89	1,205	13.54	208	682	3.28
Plaistow	171	15,180	88.77	4	200	50.00	251	5,650	22.51	5	58	11.60	.....	.....	.....
Portsmouth	916	89,556	97.77	57	3,500	61.40	735	22,090	30.05	100	1,215	12.15	102	306	3.00
Raymond	268	18,592	69.37	72	3,708	52.89	322	7,348	22.82	129	2,289	17.74	223	615	2.76
Rye	355	18,722	52.74	16	680	42.50	618	15,692	25.39	92	1,366	14.85	50	166	3.32
Salem	356	23,602	66.30	15	496	33.07	687	14,856	21.62	20	252	12.60	65	166	2.55
Sandown	102	4,875	47.79	47	1,950	41.49	174	3,666	21.07	41	733	17.87	30	125	4.16
Seabrook	142	5,793	40.80	28	1,090	38.93	167	3,148	18.85	14	187	13.36	.....	.....	.....
South Hampton	100	5,700	57.00	24	1,165	48.54	175	3,720	21.26	37	505	13.65	36	185	5.14
So. Newmarket	103	8,070	78.35	30	1,574	52.47	146	3,864	26.47	27	434	16.07	60	240	4.00
Stratham	287	24,890	86.72	44	2,452	55.73	745	13,132	17.63	24	347	14.46	182	593	3.26
Windham	206	13,762	66.80	16	730	45.63	504	11,523	22.86	76	1,194	15.71	31	98	3.16
Totals	9,518	\$653,635	\$68.62	1,626	\$72,173	\$44.38	15,297	\$340,584	\$22.26	2,642	\$41,243	\$15.61	3,477	\$11,803	\$3.39

TABLE No. 2. — *Continued.*
STRAFFORD COUNTY.

TOWNS.	HORSES.		Average per head.	OXEN.		Average per head.	COWS.		Average per head.	OTHER CATTLE.		Average per head.	SHEEP.		Average per head.
	No.	Value.		No.	Value.		No.	Value.		No.	Value.		No.	Value.	
Barrington	383	\$18,800	\$49.09	130	\$5,767	\$44.36	700	\$16,807	\$24.01	242	\$4,313	\$17.82	242	\$826	\$3.41
Dover	1,076	94,109	87.46	50	2,720	54.50	901	22,703	25.20	168	2,738	16.30	117	438	3.74
Durham	231	16,872	73.08	65	2,660	40.92	375	8,996	23.99	114	1,764	15.47	207	630	3.04
Farmington	512	36,335	71.16	145	6,320	43.58	640	14,390	22.49	202	3,051	15.10	194	529	2.73
Lee	229	14,860	64.90	68	3,370	49.56	400	10,416	26.04	185	2,928	15.83	316	1,132	3.58
Madbury	133	11,530	86.69	44	2,465	56.02	310	6,474	20.88	96	1,136	11.83	143	396	2.77
Middleton	68	2,805	41.25	54	1,670	30.93	97	1,555	16.03	69	1,179	17.09	113	278	2.46
Milton	348	21,075	60.56	84	3,380	40.24	405	7,205	17.79	113	1,720	15.22	203	615	3.03
New Durham	176	12,260	69.66	74	3,430	46.35	248	5,660	22.82	141	2,469	17.51	86	273	3.17
Rochester	1,013	70,432	69.55	140	5,642	40.30	1,059	22,366	21.12	126	1,742	13.83	172	608	3.53
Rollinsford	178	13,790	77.47	12	790	65.83	398	9,170	23.04	56	935	16.70	65	195	3.00
Somersworth	345	27,543	79.83	14	628	44.91	240	4,980	20.75	5	80	16.00	9	29	3.22
Strafford	343	18,390	53.61	173	7,510	43.41	697	13,576	19.46	428	7,167	16.75	562	1,557	2.77
Totals	5,035	\$358,821	\$71.26	1,053	\$46,359	\$44.02	6,470	\$144,298	\$22.29	1,945	\$31,222	\$16.05	2,429	\$7,506	\$3.09

BELKNAP COUNTY.

Alton.....	437	\$28,630	\$65.51	142	\$6,175	\$43.48	609	\$13,269	\$21.79	317	\$5,234	\$16.51	276	\$894	\$3.24
Barnstead	414	27,685	66.87	142	6,670	46.97	697	15,151	21.74	417	7,101	17.03	372	1,298	3.49
Belmont	360	22,806	63.35	108	3,756	34.78	526	10,416	19.80	206	2,674	12.98	216	792	3.67
Centre Harbor..	155	8,358	53.92	74	2,996	40.49	221	4,152	18.54	110	1,832	16.65	155	532	3.43
Gilford.....	384	24,244	63.14	189	7,264	38.43	680	12,942	19.03	326	4,598	14.10	720	2,748	3.87
Gilmanton	390	24,120	61.82	189	8,666	45.85	613	13,920	22.54	695	12,234	17.60	1,021	3,280	3.21
Laconia.....	540	45,578	84.40	56	2,214	39.54	404	7,102	17.57	143	1,936	13.54	55	220	4.00
Meredith	399	25,905	64.92	176	7,229	41.07	664	12,058	18.16	281	4,808	17.11	437	1,619	3.75
New Hampton..	265	16,776	63.27	118	4,106	34.83	479	9,068	18.93	289	3,848	11.70	477	2,102	4.41
Saunderston . . .	366	21,978	60.05	168	7,552	44.95	694	14,110	20.33	317	4,744	14.96	1,357	4,160	3.06
Tilton.....	295	21,610	73.25	74	2,685	36.28	312	7,077	20.69	73	822	11.26	279	945	3.39
Totals	4,005	\$267,690	\$66.84	1,436	\$59,313	\$41.30	5,932	\$119,265	\$20.11	3,174	\$49,831	\$15.86	5,365	\$18,596	\$3.47

TABLE No. 2. — *Continued.* CARROLL COUNTY.

TOWNS.	HORSES.		Average per head.		OXEN.		Average per head.		COWS.		Average per head.		OTHER CATTLE.		Average per head.		SHEEP.		Average per head.
	No.	Value.			No.	Value.			No.	Value.			No.	Value.			No.	Value.	
Albany.....	135	\$7,954	\$58.92	38	\$1,230	\$32.37	88	\$1,174	\$13.30	26	\$306	\$11.77	.....	.....	.....	.....	.....	.....	.....
Bartlett.....	355	23,510	66.23	8	400	50.00	295	5,898	19.97	30	438	14.60	.....	.....	.....	.....	82	\$274	\$3.34
Brookfield.....	119	7,130	59.92	93	3,530	37.96	219	4,466	20.39	86	1,346	15.65	.....	.....	.....	.....	142	512	3.61
Chatham.....	115	6,560	57.04	93	3,320	35.70	193	3,672	19.03	109	1,587	14.56	.....	.....	.....	.....	285	931	3.27
Conway.....	728	41,560	57.09	166	5,013	30.20	646	10,805	16.43	191	2,352	12.31	.....	.....	.....	.....	111	280	2.52
Eaton.....	130	6,948	53.45	113	3,850	34.07	188	3,184	16.94	120	1,644	13.70	.....	.....	.....	.....	248	616	2.48
Effingham.....	234	15,255	65.19	124	4,340	35.00	298	5,313	17.83	113	1,511	13.37	.....	.....	.....	.....	33	97	2.94
Freedom.....	289	20,289	70.20	168	5,753	34.24	335	6,888	20.56	187	3,011	16.10	.....	.....	.....	.....	376	953	2.53
Hart's Location..	12	810	67.50	8	400	50.00	8	200	25.00	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Jackson.....	213	15,348	72.06	84	3,588	42.71	301	5,286	17.56	108	1,776	16.44	.....	.....	.....	.....	522	1,444	2.77
Madison.....	181	9,244	51.07	89	2,714	30.49	187	3,060	16.36	74	958	12.95	.....	.....	.....	.....	199	514	2.58
Montonborough..	248	15,190	61.25	152	5,573	36.66	290	5,452	18.80	381	4,538	11.91	.....	.....	.....	.....	299	842	2.82
Ossipee.....	453	27,116	59.86	242	10,192	42.12	522	9,886	18.94	202	3,258	16.13	.....	.....	.....	.....	244	692	2.84
Sandwich.....	450	26,782	59.51	298	13,380	44.90	623	14,052	22.56	483	7,776	16.10	.....	.....	.....	.....	678	2,044	3.01
Tamworth.....	359	22,752	63.38	156	7,240	46.41	397	8,300	20.91	161	2,380	14.78	.....	.....	.....	.....	261	806	3.09
Tuftenborough..	213	11,230	52.72	104	4,094	39.36	416	8,210	19.73	328	6,148	18.74	.....	.....	.....	.....	179	528	2.95
Wakefield.....	274	17,412	63.55	210	8,176	38.93	451	9,720	21.55	153	2,382	15.57	.....	.....	.....	.....	308	810	2.63
Wolfeborough...	552	32,410	58.71	228	8,913	39.09	699	14,058	20.11	373	6,338	17.00	.....	.....	.....	.....	267	718	2.69
Totals.....	5,060	\$307,500	\$60.77	2,374	\$91,706	\$38.62	6,156	\$119,624	\$19.43	3,125	\$47,749	\$15.28	.....	.....	.....	.....	4,234	\$12,061	\$2.85

MERRIMACK COUNTY.

Allenstown	109	\$8,275	\$75.92	25	\$1,425	\$57.00	101	\$2,308	\$22.85	28	\$372	\$13.29	47	\$104	\$3.49
Andover	311	20,212	64.99	133	5,862	44.01	471	10,808	22.95	59	3,206	15.87	720	2,138	2.97
Boscawen	277	17,745	64.06	46	2,140	46.52	351	7,430	21.17	50	1,043	17.68	403	1,080	2.63
Bow	177	12,746	72.01	44	2,150	48.86	471	9,330	19.56	191	2,755	14.42	56	221	3.95
Bradford	237	16,255	68.59	108	4,699	43.51	658	14,745	22.41	371	5,436	14.65	874	3,370	3.86
Canterbury	292	22,104	73.70	159	7,403	46.56	584	12,103	20.72	384	6,074	15.82	722	2,401	3.32
Chichester	236	16,883	71.54	83	4,765	57.41	501	11,833	23.62	265	4,767	17.99	250	934	3.74
Concord	1,664	130,892	78.66	121	5,905	48.80	1,348	27,029	20.05	216	2,596	12.02	290	758	2.61
Danbury	202	9,200	45.54	158	5,978	37.59	436	6,734	15.44	200	2,503	12.51	823	2,253	2.74
Dunbarton	183	13,281	72.57	81	3,800	46.91	666	13,742	20.23	184	2,848	15.48	151	496	3.28
Epsom	244	16,396	67.20	140	7,038	50.27	645	15,480	24.00	171	2,935	17.16	285	1,010	3.55
Franklin	731	49,548	67.78	78	3,092	39.64	553	9,883	17.86	129	1,796	12.37	415	1,215	2.93
Henniker	345	24,194	70.13	140	5,838	41.70	823	18,355	22.30	508	7,095	13.97	612	1,502	2.45
Hill	158	9,983	63.18	44	1,543	35.07	298	5,618	18.52	78	881	11.30	582	1,330	2.29
Hooksett	283	21,896	77.37	20	1,060	53.00	405	9,935	24.53	120	2,195	18.29	56	228	4.07
Hopkinton	471	29,786	63.24	147	6,318	42.98	1,172	24,918	21.26	317	4,706	14.86	389	972	2.50
London	396	23,097	58.33	183	8,439	46.11	786	15,485	19.70	519	7,335	14.13	752	2,014	2.68
Newbury	167	13,078	78.31	98	5,170	52.76	374	8,868	21.04	156	2,434	15.73	729	2,639	3.64
New London	282	21,575	76.51	156	6,165	39.52	359	8,316	23.16	202	3,001	14.85	763	2,169	2.84
Northfield	260	15,550	59.81	94	3,602	38.32	427	7,302	17.10	112	1,400	12.50	369	1,049	2.84
Pembroke	383	31,140	81.31	51	2,284	44.78	594	15,188	25.56	142	2,062	14.52	83	258	3.11
Pittsfield	515	37,850	73.50	86	3,670	42.67	595	12,820	21.55	180	2,635	14.64	220	895	4.07
Salisbury	227	14,892	65.60	121	5,144	42.51	386	7,870	20.59	185	2,836	15.33	1,802	4,710	2.61
Sutton	248	14,898	60.07	152	6,374	41.93	441	9,878	22.40	422	6,801	16.26	1,072	3,080	2.87
Warner	434	29,353	67.63	136	6,993	51.42	740	16,693	22.56	314	4,371	13.92	926	2,812	3.04
Webster	267	17,700	66.29	76	3,635	47.83	354	7,087	21.71	141	2,144	15.21	977	2,527	2.59
Wilnot	219	14,046	64.14	93	4,032	43.37	349	8,146	23.34	226	4,233	18.74	1,177	3,176	2.70
Totals	9,318	\$652,575	\$70.03	2,773	\$124,524	\$44.91	14,894	\$318,504	\$21.38	6,022	\$90,343	\$15.00	15,545	\$45,401	\$2.92

TABLE No. 2. — *Continued.*
HILLSBOROUGH COUNTY.

TOWNS.	HORSES.		Average per head.	OXEN.		Average per head.	COWS.		Average per head.	OTHER CATTLE.		Average per head.	SHEEP.		Average per head.
	No.	Value.		No.	Value.		No.	Value.		No.	Value.				
Amherst.....	308	\$26,792	\$86.99	30	\$1,140	\$38.00	986	\$21,230	\$21.55	186	\$2,842	\$15.28	2	\$6	\$3.00
Antrim.....	343	19,115	55.73	98	3,960	40.41	567	12,048	21.25	349	4,615	13.22	297	1,055	3.55
Bedford.....	467	33,475	71.68	48	2,300	47.92	1,094	25,608	23.41	149	2,213	14.83	38	139	3.66
Bennington....	120	6,654	55.45	18	664	36.33	191	3,715	19.45	32	388	12.13	39	84	2.15
Brookline.....	187	12,330	65.94	8	405	50.62	161	3,405	21.15	38	505	13.29	.....	.....	.....
Deering.....	160	7,619	47.62	100	4,152	41.52	540	10,262	19.00	166	2,573	15.50	280	774	2.76
Franeestown....	247	15,932	64.50	74	3,558	48.08	612	12,302	20.10	139	1,928	13.87	230	646	2.81
Goffstown.....	474	33,850	71.41	95	3,864	40.67	961	20,358	21.18	178	2,536	14.25	183	602	3.29
Greenfield.....	148	12,885	87.06	44	1,960	44.55	452	9,021	19.96	184	2,657	14.44	127	439	3.46
Greenville.....	146	11,994	82.15	4	155	38.75	209	4,852	23.22	23	328	14.26	23	60	2.61
Hancock.....	217	15,235	70.21	65	2,935	45.15	522	11,586	22.20	279	4,104	14.71	84	295	3.51
Hillsborough....	661	39,224	59.34	165	7,286	44.16	1,039	19,924	19.17	312	4,460	14.29	304	984	3.24
Hollis.....	339	28,630	84.45	18	760	42.22	978	24,555	25.11	178	2,930	16.46	15	70	4.67
Hudson.....	330	24,400	73.94	14	670	47.86	655	12,626	19.28	137	1,814	13.24	55	202	3.67
Litchfield.....	116	8,664	74.78	10	540	54.00	236	5,757	24.39	98	569	14.59	21	82	3.90
Lyndeborough..	187	11,304	60.45	55	2,332	42.40	757	15,638	20.66	98	1,294	13.20	25	84	3.36
Manchester.....	2,235	200,182	89.57	17	636	36.82	516	10,836	21.00	83	1,108	13.35	14	42	3.00

Mason	155	10,683	68.92	22	1,065	48.41	356	7,975	22.40	72	1,072	14.89	15	80	5.33
Merrinack	238	17,295	72.67	32	1,520	47.50	505	10,698	21.18	109	1,590	13.67	61	225	3.69
Milford	517	41,916	81.08	10	550	55.00	914	24,599	26.91	143	2,141	14.97	24	66	2.75
Mont Vernon	160	12,108	75.68	6	240	40.00	399	8,546	21.42	73	1,054	14.44	2	8	4.00
Nashua	1,295	100,400	77.53	12	450	37.50	654	13,077	20.00	41	544	13.27	.....	.....	.....
New Boston	349	24,740	70.89	94	4,483	47.69	983	22,688	23.08	228	3,143	13.77	312	929	2.98
New Ipswich	224	14,272	63.71	32	1,190	37.19	446	10,618	23.81	81	1,232	15.21	16	50	3.12
Pelham	287	18,510	64.49	8	410	51.25	1,038	20,343	19.60	91	1,212	13.32	20	60	3.00
Peterborough	420	32,255	76.80	60	3,038	50.63	569	12,955	22.77	327	5,469	16.70	171	572	3.35
Sharon	42	2,655	63.21	11	435	39.54	79	1,398	17.70	30	349	11.63	39	129	3.31
Temple	129	8,736	67.72	36	1,426	39.61	491	9,385	19.12	105	1,462	13.92	33	156	4.73
Weare	429	30,879	71.98	149	7,141	47.93	962	23,734	24.67	435	6,910	15.84	852	2,287	2.68
Wilton	346	26,501	76.59	41	1,636	39.91	773	17,172	22.21	138	1,995	14.46	108	318	2.94
Windsor	24	1,117	46.54	4	145	36.25	84	1,540	18.33	28	303	10.82	65	248	3.82
Totals	11,300	\$850,352	\$75.25	1,380	\$61,046	\$44.24	18,729	\$408,454	\$21.88	4,471	\$65,340	\$14.61	3,455	\$10,692	\$3.09

TABLE No. 2. — *Continued.*
CHESHIRE COUNTY.

TOWNS.	HORSES.		Average per head.	OXEN.		Average per head.	COWS.		Average per head.	OTHER CATTLE.		Average per head.	SHEEP.		Average per head.
	No.	Value.		No.	Value.		No.	Value.		No.	Value.		No.	Value.	
Alstead.....	350	\$24,883	\$71.09	96	\$4,475	\$46.61	516	\$11,040	\$21.40	191	\$2,999	\$15.70	1,265	\$4,330	\$3.42
Chesterfield.....	353	27,755	78.63	120	6,315	52.62	617	15,678	25.41	225	3,798	16.88	403	1,721	4.27
Dublin.....	197	15,650	79.44	60	2,680	44.67	308	6,897	22.39	98	1,242	12.67	80	257	3.21
Fitzwilliam.....	247	18,070	73.16	68	3,315	48.75	368	8,471	23.02	92	1,247	13.56	72	202	2.71
Gilsun.....	189	12,532	66.31	52	2,477	47.63	234	6,320	27.01	109	2,085	19.13	359	1,118	3.11
Harrisville.....	150	11,227	74.85	48	2,235	46.56	280	5,232	18.69	88	1,048	11.91	323	1,078	3.34
Hinsdale.....	366	24,405	66.08	61	2,886	45.09	516	10,552	20.45	128	1,681	13.13	70	227	3.24
Jaffrey.....	318	27,008	78.18	79	3,488	44.15	613	11,884	19.37	166	2,192	13.20	146	512	3.51
Keene.....	1,050	87,819	83.64	28	1,488	53.14	1,032	25,127	23.22	215	3,546	16.49	821	3,366	4.10
Marlborough.....	276	23,638	85.64	47	2,474	52.64	384	8,802	22.92	82	1,280	15.61	49	268	5.47
Marlow.....	207	16,330	78.89	82	4,466	54.46	337	8,726	25.89	143	2,648	18.52	956	2,920	3.05
Nelson.....	96	6,128	63.83	36	1,724	47.89	199	4,092	20.56	70	1,050	15.00	330	926	3.05
Richmond.....	167	10,265	61.47	44	1,990	45.23	223	4,847	21.77	71	1,186	16.70	156	476	3.05
Rindge.....	331	23,210	70.12	62	2,668	43.03	545	9,681	17.76	136	2,192	16.12	159	563	3.54
Roxbury.....	43	1,984	46.14	20	1,085	54.25	93	1,914	20.58	31	347	11.19	243	880	3.62
Stoddard.....	85	5,222	61.41	48	2,182	45.46	182	3,854	21.18	83	1,090	13.13	402	1,256	3.12
Sullivan.....	118	9,525	80.72	55	3,085	56.09	289	6,040	20.90	112	1,748	15.61	451	1,325	2.94

Surry	159	11,030	69.36	36	1,620	45.00	224	4,554	20.33	83	1,280	15.46	390	1,174	3.01
Swanzy	410	28,880	70.44	44	1,815	41.25	568	10,727	18.89	207	2,482	11.99	448	1,243	2.77
Troy	190	15,804	83.18	32	1,400	43.75	264	6,615	25.06	30	481	16.03	8	10	3.33
Walpole	645	52,544	81.46	101	5,588	55.32	1,089	28,259	25.95	339	7,271	21.45	5,661	17,568	3.10
Westmoreland ..	365	27,503	75.34	50	2,631	52.62	728	18,706	27.07	453	8,340	18.41	890	3,125	3.51
Winchester	506	37,008	73.12	83	4,654	56.07	821	19,916	23.04	172	2,477	14.40	228	956	4.19
Totals	6,848	\$518,420	\$75.70	1,355	\$66,741	\$49.26	10,430	\$237,933	\$22.81	3,324	\$53,710	\$16.16	13,905	\$45,501	\$3.27

SULLIVAN COUNTY.

Acworth	344	\$23,992	\$69.74	112	\$5,432	\$18.50	356	\$8,676	\$24.37	280	\$5,387	\$19.24	2,040	\$7,082	\$3.47
Charlestown	437	33,935	77.65	58	2,831	48.81	658	15,204	23.11	189	4,200	22.22	3,117	10,344	3.32
Claremont	871	73,694	84.61	124	5,197	41.91	1,223	26,217	21.44	441	6,096	13.82	2,144	5,424	2.53
Cornish	436	28,460	65.28	124	6,420	51.77	790	18,586	23.53	295	4,862	16.48	1,827	4,548	2.49
Croydon	205	12,675	61.83	114	4,395	38.55	244	6,258	25.65	167	2,237	13.34	995	3,092	3.11
Goshen	176	10,098	57.20	52	2,092	40.23	286	5,870	20.52	125	2,028	16.22	379	974	2.57
Grantham	138	8,806	63.81	63	2,695	42.78	251	4,727	18.83	105	1,326	12.63	296	930	3.14
Langdon	164	13,912	84.83	40	2,064	51.60	293	8,390	28.63	144	2,828	19.64	1,193	3,808	3.24
Lempster	244	13,442	55.09	80	3,447	43.08	322	7,257	25.64	148	2,407	16.26	341	958	2.81
Newport	738	57,512	77.93	129	5,654	43.83	843	17,288	20.51	391	5,074	12.98	1,145	3,076	2.69
Plainfield	449	28,362	63.17	198	9,648	48.73	730	15,428	21.13	445	7,560	16.99	4,805	11,024	2.29
Springfield	179	10,280	57.43	116	5,145	44.35	241	4,620	19.17	158	2,703	17.11	1,080	2,629	2.43
Sunapee	230	17,110	74.39	104	4,652	44.73	321	7,008	21.83	108	1,576	14.59	1,281	736	3.05
Unity	256	17,430	68.09	126	5,950	47.22	419	9,587	22.88	261	4,399	16.85	1,625	4,423	2.72
Washington	185	13,134	70.99	96	4,108	42.79	357	7,550	21.15	158	2,354	14.90	468	1,494	3.19
Totals	5,052	\$362,842	\$71.82	1,536	\$69,730	\$44.68	7,334	\$162,666	\$22.18	3,415	\$55,037	\$16.12	21,696	\$60,602	\$2.79

TABLE No. 2. — *Continued.*
GRAFTON COUNTY.

TOWNS.	HORSES.		Average per head.	OXEN.		Average per head.	COWS.		Average per head.	OTHER CATTLE.		Average per head.	SHEEP.		Average per head.
	No.	Value.		No.	Value.		No.	Value.		No.	Value.		No.	Value.	
Alexandria	237	\$16,264	\$68.62	126	\$5,548	\$44.03	311	\$5,656	\$18.19	247	\$4,214	\$17.06	863	\$2,575	\$2.98
Ashland	238	19,726	82.88	28	1,076	38.43	212	4,414	20.82	51	786	15.41	122	315	2.58
Bath	517	34,502	66.74	101	4,666	46.20	803	15,814	19.69	439	6,666	15.18	2,883	7,828	2.71
Beuton	101	6,006	59.47	60	2,381	39.68	179	3,690	20.61	75	907	12.09	71	212	2.99
Bethlehem	485	28,972	59.74	86	3,754	43.65	629	13,078	20.79	228	2,989	13.11	370	1,331	3.60
Bridgewater	105	6,552	62.40	96	4,006	41.31	148	2,932	19.81	123	1,802	14.65	547	1,592	2.91
Bristol	321	23,870	74.36	90	4,034	44.82	352	6,806	19.34	115	1,522	13.23	182	736	4.04
Campton	388	23,702	61.09	190	7,762	40.85	449	9,122	20.32	362	5,512	15.31	964	3,120	3.24
Canaan	410	23,281	56.78	128	5,264	41.13	711	13,502	18.99	203	2,737	13.48	1,346	3,068	2.28
Dorchester	149	6,744	45.26	159	4,586	28.84	178	3,238	18.19	69	800	11.59	599	1,444	2.41
Easton	171	8,991	52.58	90	3,051	33.90	116	1,849	15.94	64	874	13.66	193	540	2.80
Ellsworth	31	1,835	59.19	55	1,890	34.36	65	1,056	16.25	22	308	14.00	239	654	2.74
Enfield	400	25,115	62.79	165	7,165	43.42	566	11,075	20.63	207	3,150	15.22	1,733	3,685	2.13
Franconia	230	15,688	68.21	18	675	37.50	272	4,848	17.82	92	1,275	13.86	162	586	3.62
Grafton	230	14,353	62.40	161	6,641	41.25	443	8,671	19.57	189	2,756	14.58	1,611	4,422	2.74
Groton	120	6,486	54.05	61	2,238	36.69	202	3,364	16.65	130	2,006	15.43	338	1,074	3.18
Hanover	499	41,996	84.16	112	5,736	51.21	970	22,685	23.39	514	8,108	15.77	2,090	5,324	2.55
Haverhill	808	51,261	63.44	95	4,050	42.63	1,676	33,500	19.99	719	10,919	15.19	1,039	2,909	2.80

Hebron	85	4,600	54.12	58	2,202	39.97	157	3,190	20.32	114	1,882	16.51	378	1,090	2.88
Holderness.....	198	11,860	59.90	94	4,344	46.21	311	6,692	21.52	194	3,290	16.96	411	1,278	3.11
Landaff	219	14,505	66.23	104	4,330	41.63	281	5,608	19.96	202	3,218	15.93	887	2,512	2.83
Lebanon	697	61,299	87.95	87	4,527	52.03	1,105	27,373	24.77	279	4,614	16.54	3,411	9,366	2.75
Lincoln	35	2,360	67.43	12	505	42.08	32	493	15.41	3	45	15.00	.....	.....	.....
Lisbon	808	56,345	69.73	62	2,317	37.37	889	18,930	21.29	433	5,884	13.59	1,870	6,832	3.61
Littleton	835	57,914	69.36	164	6,618	40.35	1,174	24,774	21.10	349	4,720	13.52	1,140	4,280	3.75
Livemore.....	55	2,750	50.00	14	500	35.71	5	200	40.00	.....	.....	.....	.....	.....	.....
Lyman	266	15,166	52.02	30	1,095	36.50	510	11,306	22.17	215	3,152	14.66	818	3,323	4.06
Lyme	361	25,135	69.63	127	6,540	51.50	934	20,361	21.80	374	5,533	14.77	2,762	7,232	2.62
Monroe	226	15,026	66.49	28	1,220	43.57	413	9,430	22.83	185	3,006	16.24	885	3,236	3.68
Orange	96	4,435	46.20	52	2,018	38.81	163	3,306	20.28	43	487	11.33	605	1,649	2.73
Orford	372	26,880	72.26	141	6,992	49.59	794	17,364	24.16	363	5,318	14.73	1,639	3,900	2.38
Piermont	351	26,800	76.35	75	3,770	50.27	798	19,186	24.04	402	6,918	17.21	1,097	2,930	2.67
Plymouth.....	370	27,208	73.54	64	2,546	39.78	437	8,696	19.90	106	1,514	14.28	558	1,418	2.54
Runney	323	13,574	42.02	106	3,485	32.88	377	7,037	18.67	180	2,121	11.78	680	1,830	2.69
Thornton.....	217	11,470	52.86	140	4,705	33.61	298	4,593	15.41	183	2,473	13.51	490	1,202	2.45
Warren.....	247	13,749	55.66	94	3,994	42.49	344	6,342	18.44	93	1,234	13.27	758	1,802	2.38
Waterville.....	12	810	67.50	11	281	25.55	14	194	13.86	10	92	9.20	.....	.....	.....
Wentworth.....	252	14,874	59.02	139	5,334	38.37	416	7,014	16.86	119	1,420	11.92	568	1,380	2.43
Woodstock	118	7,030	59.58	52	1,722	33.12	118	2,212	18.75	24	288	12.00	117	350	2.99
Totals.....	11,583	\$769,134	\$66.40	3,475	\$143,568	\$41.31	15,952	\$370,201	\$23.21	7,720	\$101,900	\$13.55	\$97,045	\$2,822	

TABLE No. 2. — *Continued.*
COÖS COUNTY.

TOWNS.	HORSES.		Average per head.	OXEN.		Average per head.	COWS.		Average per head.	OTHER CATTLE.		Average per head.	SHEEP.		Average per head.
	No.	Value.		No.	Value.		No.	Value.		No.	Value.		No.	Value.	
Berlin.....	362	\$28,121	\$77.68	6	\$240	\$40.00	207	\$1,794	\$23.16	21	\$306	\$14.57	94	\$324	\$3.45
Carroll.....	304	16,742	55.07	8	330	41.25	257	3,958	15.40	56	628	11.21	73	222	3.04
Clarksville.....	173	8,732	50.47	36	1,142	31.61	221	4,076	18.44	132	1,720	13.03	885	2,978	3.36
Colebrook.....	758	38,766	51.14	85	3,060	36.00	832	15,148	18.21	543	8,421	15.51	2,264	8,053	3.56
Columbia.....	364	18,855	51.80	68	2,515	36.99	524	8,955	17.09	256	3,564	13.92	852	3,155	3.70
Dalton.....	193	9,620	49.84	53	1,790	33.77	364	7,353	20.28	267	3,481	13.04	653	2,070	3.17
Dummer.....	216	10,485	48.54	30	1,012	33.73	216	3,984	18.44	78	925	11.86	328	885	2.70
Errol.....	122	8,023	65.76	40	1,342	33.55	87	1,096	19.49	46	517	11.24	209	734	3.51
Gorham.....	314	21,558	68.66	4	160	40.00	165	3,656	22.16	18	226	12.56	81	252	3.11
Jefferson.....	588	25,044	42.59	102	3,010	29.51	583	10,286	17.64	259	3,118	12.04	498	1,218	2.45
Lancaster.....	883	55,774	63.16	107	4,302	40.21	1,237	23,746	19.19	520	8,120	15.62	1,005	3,608	3.59
Milan.....	514	25,982	50.55	115	3,329	30.69	391	6,285	16.07	97	1,130	11.65	541	1,405	2.60
Northumberland.	509	32,675	64.19	56	2,230	39.82	457	8,126	17.78	259	3,892	15.03	706	2,403	3.40
Pittsburg.....	302	13,356	44.23	40	1,026	25.45	401	6,489	16.18	223	2,582	11.35	1,589	4,815	3.03
Randolph.....	76	3,570	46.97	42	1,370	32.62	72	1,110	15.42	35	432	12.34	122	350	2.87
Shelburne.....	150	8,030	53.67	6	210	35.00	145	2,730	18.90	57	634	11.12	118	300	2.54
Stark.....	231	17,161	74.29	76	3,632	47.79	238	4,665	19.60	86	1,072	12.47	379	1,085	2.86

Stewartstown . . .	454	23,372	51.48	60	2,235	37.25	521	8,353	16.03	352	4,920	13.98	1,782	6,387	3.58
Stratford	474	29,185	61.57	56	1,980	35.36	337	5,293	15.71	130	1,748	13.45	586	1,631	2.78
Whitefield	448	31,378	70.04	74	2,832	38.27	695	12,893	18.55	229	3,226	14.09	206	691	3.31
Totals	7,435	\$426,449	\$57.36	1,064	\$37,947	\$35.66	7,950	\$143,596	\$18.06	3,664	\$50,612	\$13.81	12,971	\$42,566	\$3.28

TABLE No. 2. — *Continued.*
SUMMARY.

COUNTIES.	HORSES.			OXEN.			COWS.			OTHER CATTLE.			SHEEP.		
	No.	Value.	Av'ge.	No.	Value.	Av'ge.	No.	Value.	Av'ge.	No.	Value.	Av'ge.	No.	Value.	Av'g.
Rockingham ...	9,518	\$653,635	\$68.62	1,626	\$72,173	\$44.38	15,297	\$240,584	\$22.26	2,642	\$41,243	\$15.61	3,477	\$11,803	\$3.39
Stratford.....	5,035	358,821	71.26	1,053	46,352	44.02	6,470	144,298	22.29	1,945	31,222	16.05	2,429	7,506	3.09
Belknap	4,005	267,690	66.84	1,436	59,313	41.30	5,932	119,265	20.11	3,174	49,831	15.86	5,365	18,506	3.47
Carroll.....	5,060	397,500	60.77	2,374	91,706	38.02	6,156	119,624	19.43	3,125	47,749	15.28	4,234	12,061	2.85
Merrimack.....	9,318	652,575	70.03	2,773	124,524	44.91	14,894	318,504	21.38	6,022	90,343	15.00	15,545	45,401	2.92
Hillsborough...	11,300	850,352	75.25	1,380	61,046	44.24	18,729	408,454	21.88	4,471	65,340	14.61	3,455	10,692	3.09
Cheshire....	6,848	518,420	75.70	1,355	66,741	49.26	10,430	237,933	22.81	3,324	53,710	16.16	13,905	45,501	3.27
Sullivan.....	5,052	362,842	71.82	1,536	69,730	44.68	7,334	162,666	22.18	3,415	55,037	16.12	21,696	60,602	2.79
Grafton.....	11,583	769,134	66.40	3,475	143,568	41.31	15,952	370,501	23.21	7,730	104,600	13.55	34,426	97,045	2.82
Cods	7,435	426,449	57.36	1,064	37,947	35.66	7,950	143,596	18.06	3,694	50,612	13.81	12,971	42,566	3.28
Total.....	75,154	\$5,167,418	\$68.77	18,072	\$773,100	\$42.78	109,144	\$2,365,125	\$21.67	39,502	\$589,087	\$14.93	117,503	\$351,773	\$2.99
Totals for 1891, 71,276		\$5,001,898	\$70.18	19,401	\$804,031	\$41.44	112,706	\$2,403,160	\$21.32	46,827	\$706,037	\$15.08	119,999	\$339,304	\$2.83
Total value of live stock, 1892, \$9,256,103; 1891, \$9,254,430.															

REPORT

OF THE

FISH AND GAME COMMISSIONERS

OF

NEW HAMPSHIRE

TO THE

GOVERNOR AND COUNCIL,

DECEMBER, 1892.

VOLUME I. . . . PART III.

CONCORD:

IRA C. EVANS, PUBLIC PRINTER.

1892.

REPORT.

To His Excellency the Governor and his Honorable Council:

The Commissioners on Fish and Game herewith submit their annual report for the year ending December 1, 1892.

As was to be expected, the severe drought during the months of September and October of last year did great damage to the trout streams in many parts of the State, particularly in the southern and western sections. As many of the streams became nearly dry, the fish must have perished. And it will require a special effort to restore the streams to their former productiveness.

The efforts of the Commission for the past year have been principally directed to the cultivation and distribution of our indigenous food fishes, particularly the lake trout (*Salvelinus namaycush*). This excellent food and game fish is indigenous to only six of our lakes, viz., 1st and 2nd Connecticut lakes, Squam lake, Winnepesaukee lake, including Winnisquam bay, Newfound lake, and East Pond in Enfield. In the latter they had become nearly extinct. Plants of the lake trout were made there three years ago, which have shown up the past season remarkably well. They are also said to have been plenty in Mascoma lake, but as none have been caught for many years, it is supposed they have become extinct. Plants have already been made in this lake, and

will be continued for two or three years longer, when if they do not show up it may be taken for granted, that the conditions of the lake have so changed, that it is impossible to again restore them to its waters.

This excellent food and game fish is now abundant in some of our lakes, and the cost of securing the eggs and placing them in the hatcheries is so small, that the number is only limited by the capacity of the hatcheries to contain them.

As we have a large number of small lakes and ponds that are adapted to this fish, a special effort will be made to introduce them into such as we find are adapted to their wants.

Such ponds should have an area of not less than five hundred acres, with sufficient depth to give a temperature at bottom of not less than 55 degrees, with plenty of small minnows, or, what is better, fresh water smelt for food.

Where these conditions exist, there should be no difficulty in stocking such with this fish.

ALEWIVES.

The attention of the Commissioners has again been called to the preservation and protection of this fish by a petition which has been sent them asking for a fishway in the dam at Exeter, which, if built, would allow them to ascend the river for several miles, which would give them new and extensive spawning grounds. The increase would soon make this fishery very valuable.

The value of the fish now taken is about \$4,000 per annum. These fish now spawn near the dam, where the tide ebbs and flows, and the eggs are killed by exposure.

As the dam is only about ten feet high, the expense of a fishway would be small.

No action was taken upon the petition for the reason that, as the law now stands, they could not compel the owners of the dam to build the fishway.

It is to be hoped that the Legislature at the coming session will take such action as may be necessary to have the fishway built.

UNIFORM GAME LAWS.

An adjourned meeting of the New England Fish Commissioners was held in Boston, November 16; all of the States were represented. The time was taken up with a discussion of the Lobster and Menhaden fisheries.

Our lobster fishery is small when compared with that of Maine and Massachusetts, as we have only eighteen miles of coast line, yet the annual catch of 140,000 pounds shows that what ground we do have is prolific with this valuable crustacean.

The rapid decline during the past few years in the number and size taken on our New England coast is such as to demand prompt action by the several States, if this excellent shell fish is to form an important factor in our food supply in the future as it has in the past.

The total catch of lobsters on the New England coast in 1889 was 30,449,603 pounds, valued at \$833,736.

There is no valid reason why all the States interested cannot unite in such uniform laws and regulations, which, if properly drawn, will have a tendency to check the decline and eventually restore the fishery to its former abundance.

The work of the Commission is increasing each year, and the importance of the work that is being done is better understood and appreciated by every one. In 1883,

the number of eggs taken from our native fish was only 125,000. In 1892, the number of young fish planted in the various lakes and streams was 2,912,000, and with the exception of 125,000 all were native fish.

SAWDUST.

The attention of the Legislature is again called to the pollution of our streams by sawdust and saw mill refuse. The baneful effect of sawdust, as one of the most destructive agents for polluting the streams and destroying fish life, has caused the enactment, in many States and countries, of stringent laws to prevent this evil. To such an extent is this now being done by steam mills that are located on the streams, for the reason that the refuse can be easily disposed of by dumping it into the water, to the annoyance and damage of the riparian owners below them, — that it would seem as though the time had come for some action to be taken by the Legislature to abate in some degree this pernicious practice. It is a well known fact that when sawdust, mill-refuse, and other deleterious substances have been thrown into our streams fish-life and vegetation of all kinds have in many cases been entirely destroyed. This fact is more particularly noticeable among the higher order of fishes, especially the brook trout of our mountain streams.

It is well known that many of our purest and coldest streams that formally abounded with the finest of trout are now destitute of this noble fish. The bottom and eddies being filled with a foul and rotting mass of sawdust, from which poisonous gases are thrown off, that destroy and drive away insect life, which is the principal food of fish in the younger stages of their existence.

Not many years ago the Ammonoosuc river, in the north part of the State, was a clear, limpid stream and

well stocked with trout. Mills were built, and all the sawdust and refuse were dumped into its pure waters; to-day its condition is a disgrace to the State.

The same fate now threatens the beautiful Pemigewasset. Steam mills are being built with the intention of dumping all the refuse into the river, to the destruction of fish life and immense damage to the riparian owners below. And unless prompt action is taken by the present Legislature to prevent this great evil it will soon become a second Ammonoosuc, and the "Basin and Pool," whose clear and crystal depths are the admiration of thousands of our summer visitors, will become filled with an unsightly mass of rotting refuse, changing the transparent water to the color of ink, and emitting odors offensive to the sense of smell and detrimental to health. Nearly all civilized countries have found it necessary to pass stringent laws upon this subject, and mill owners have not found it a great hardship to comply with the requirements of the law.

HATCHERIES.

There are now seven hatcheries located in different parts of the State, three being devoted to the breeding of lake trout alone; the others to brook trout and salmon.

The work done at each hatchery will be given in detail, and is as follows:

PLYMOUTH STATION.

Two thousand four hundred and sixty wild trout have been added to the stock of breeding trout in the ponds. As all of these were five inches and upwards in length, they should add materially to the crop of eggs another year.

The price paid for the above trout was three dollars per hundred, delivered at the hatchery. Many of the oldest and largest trout have died the past year, having reached the limit that they will live in confinement. This, with the loss of eggs by the early spawning of many of the largest females, will reduce the number this season.

There have been one million one hundred and fifty thousand young fry distributed from this station this season. This large plant was made without loss.

December 22, twenty-five thousand eggs of the Loch Leven trout were received from the United States hatchery at Northville, Mich. Twenty thousand of the eggs were transferred to the Sunapee Lake hatchery, the remainder were retained at this station.

March 1, twenty-five thousand eggs of land-locked salmon were received from the Grand Lake Stream hatchery. These were transferred to the Colebrook hatchery, and the fry were planted in the first Connecticut lake. March 17, 1891, a plant of twelve thousand young brook trout fry that were hatched in December, 1890, was made in Whitcomb Mountain pond, which is fed by springs, and has no visible outlet. It contained no fish of any kind until this plant was made. In October, 1892, a male trout was sent to the hatchery here, fourteen inches in length and over one pound in weight. This fish was taken from a spawning bed at one end of the pond where the trout were so plenty that it was caught with the hands from among hundreds of nearly the same size. The distribution of young fry from the several stations for 1892 is as follows :

PLYMOUTH STATION.

BROOK TROUT.

TOWN.	NUMBER.	APPLICANT.
Henniker . .	10,000	Peter S. Drew.
Antrim . .	10,000	John W. Duncan.
Bennington . .	10,000	A. W. Grey.
Nashua . .	5,000	C. S. Collins.
Nashua . .	10,000	J. N. Woodward.
Wilton . .	10,000	A. Beard.
Weare . .	10,000	J. P. Whittle.
Derry . .	5,000	W. H. Bachelder.
Dover . .	5,000	F. A. Christie.
Madbury . .	5,000	"
Lee . .	5,000	"
Durham . .	5,000	"
Portsmouth . .	10,000	Stephen Decatur.
Exeter . .	10,000	J. Warren Towle.
Raymond . .	10,000	Wesley Poor.
Hampton Falls . .	10,000	Geo. C. Healey.
Manchester and vic'y	30,000	Geo. W. Riddle.
New Boston . .	10,000	J. L. Stevens.
Reed's Ferry . .	5,000	Geo. W. Darrah.
Northwood . .	15,000	Leslie I. Parsons.
Barnstead . .	5,000	N. S. Drake.
Loudon . .	5,000	"
Concord . .	25,000	H. B. Roby.
Penacook . .	5,000	J. I. Hoyt.
Boscawen . .	10,000	Geo. A. Gross.
Grafton . .	10,000	G. M. Sulloway.
Enfield . .	10,000	F. T. Currier.
Canaan . .	10,000	W. B. Richardson.
Lebanon . .	10,000	N. W. Morse.
Plainfield . .	10,000	F. Moulton.

Warren	.	.	10,000	Frank C. Clement.
Warner	.	.	10,000	E. H. Carroll.
Claremont	.	.	15,000	W. M. Smith.
Orford	.	.	10,000	Paul Lang.
Bethlehem	.	.	10,000	A. W. Bingham.
Lisbon	.	.	10,000	L. C. Payne.
Lancaster	.	.	10,000	H. S. Whitcomb.
Carroll	.	.	20,000	O. C. Barron.
Jackson	.	.	15,000	Wm. W. Trickey.
Sandwich	.	.	10,000	G. H. Prescott.
Littleton	.	.	10,000	C. C. Smith.
Campton	.	.	10,000	Geo. W. Wallace.
Woodstock	.	.	5,000	Moody Howland.
Waterville	.	.	25,000	S. B. Elliott.
Gilford	.	.	15,000	F. A. Wadley.
Canterbury	.	.	10,000	C. E. Morrill.
Bow	.	.	10,000	F. E. Colby.
New Ipswich	.	.	10,000	Capt. Hubbard.
Plymouth	.	.	5,000	T. J. Adams.
Laconia	.	.	10,000	J. T. Busiel.
Franconia	.	.	5,000	J. Elliott.
Milford	.	.	10,000	W. L. Winslow.
Barrington	.	.	5,000	W. B. Swain.
Merrimack	.	.	5,000	Geo. W. Darrah.
Hillsborough	.	.	10,000	H. C. Cutting.
Rochester	.	.	10,000	Dr. Farrington.
Loudon	.	.	5,000	Nathl. Martin.
Plymouth	.	.	5,000	C. A. Webster.
Jefferson	.	.	15,000	N. Perkins.
Goffstown	.	.	10,000	N. Lufkin.
Enfield	.	.	5,000	H. J. Cole.
Sandwich	.	.	15,000	W. F. Langdon.
Fiberwood Co.	.	.	3,000	

AUREOLUS, OR SUNAPEE TROUT.

Grafton	.	.	10,000	B. F. Davis.
Bradford	.	.	5,000	F. H. Gould.
Total	.	.	15,000	

LAKE TROUT.

Rumney	.	.	15,000	J. P. Holt.
Squam lake	.	.	215,000	
Total	.	.	230,000	

LAND-LOCKED SALMON.

Squam lake	.	.	.	.	.	.	30,000
Newfound lake	.	.	.	.	.	.	20,000
Winnepesaukee lake	25,000
Total	75,000

PENOBSCOT SALMON.

Pemigewasset river	200,000
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LOCH LEVEN TROUT.

Transferred to Sunapee station	20,000
Retained at Plymouth	5,000
Californian trout	.	.	.	.	.	.	25,000
Total	.	.	.	.	.	.	50,000

TOTAL DISTRIBUTION FROM PLYMOUTH.

Brook trout	.	.	.	.	.	.	603,000
Lake trout	.	.	.	.	.	.	215,000
Aureolus	.	.	.	.	.	.	15,000
Land-locked salmon	.	.	.	.	.	.	75,000
Penobscot salmon	.	.	.	.	.	.	200,000
Rainbow trout	.	.	.	.	.	.	25,000
Total	.	.	.	.	.	.	1,133,000

KEENE STATION.

BROOK TROUT.

Walpole.	.	.	10,000	W. D. Knowlton.
Peterborough	.	.	10,000	M. L. Morrison.
Troy	.	.	10,000	E. B. Dort.
Hancock	.	.	10,000	Eugene Wasson.
Jaffrey	.	.	10,000	J. Cutler.
Greenfield	.	.	10,000	F. W. Dunklee.
Keene	.	.	10,000	C. F. Rowell.
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Total	.	.	70,000	

LAKE TROUT.

Chesterfield lake	35,000
Other lakes	15,000
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Total	50,000

TOTAL DISTRIBUTION FROM THE KEENE STATION.

Brook trout	70,000
Lake trout	50,000
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Total	120,000

COLEBROOK STATION.

Brook trout	35,000
Land-locked salmon	25,000
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Total	60,000

SUNAPEE STATION.

LAND-LOCKED SALMON.

Sunapee lake	34,000
Pleasant pond, New London	10,000
Brook trout	.	.	.	.	.	125,000

AUREOLUS OR GOLDEN TROUT.

Sunapee lake	105,000
Loch Leven trout	25,000
Total	<u>299,000</u>

LACONIA STATION.

LAKE TROUT.

Madison, Silver lake	10,000
Concord, Penacook lake	10,000
Hopkinton	10,000
Dover	10,000
Winnisquam bay	310,000
Winnepesaukee lake	400,000
Total	<u>750,000</u>

BRISTOL STATION.

Enfield, Mascoma lake	15,000
“ East pond	20,000
Franklin, Webster lake	15,000
Newfound lake	500,000
Total	<u>550,000</u>

TOTAL DISTRIBUTION.

Brook trout	833,000
Lake trout	1,565,000
Penobscot salmon	200,000
Land-locked salmon	144,000
Aureolus or golden trout	120,000
Loch Leven trout	25,000
California trout	25,000
Total	<u>2,912,000</u>

TOTAL DISTRIBUTION OF FRY FROM EACH STATION.

Plymouth	1,133,000
Laconia	750,000
Bristol	550,000
Sunapee	299,000
Keene	120,000
Colebrook	60,000
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Total	2,912,000

SUNAPEE STATION.

The large plant made this year in the lake will be of great benefit in keeping up its reputation as one of the best fishing resorts in New England.

The work of securing the breeding fish was under the charge of R. F. Sargent. The first trout were taken September 14.

There was a large increase of salmon, but, owing to the unusually rough and stormy weather, not as many brook trout were secured as last year.

Some very fine hybrids were taken at the mouth of Pike brook, and also among the aureolus on the spawning beds in the lake. The fishing in the lake this season was better than last. The number of brook trout and salmon taken showed a marked increase over previous years. The aureolus, or golden trout, in size and numbers were fully up to the average. This peculiar trout, or more properly charr, still continues to attract the attention of ichthyologists; and in face of the well known fact that it has existed, and has been caught in at least one other lake in this State and one in Maine for more than fifty years, some still persist in claiming it as a "recent introduction from Europe." On what ground they base this extraordinary claim no one knows, as they

have never been able to show that any of the saibling brought to this country have been introduced into either of the lakes that are known to contain this fish ; while in one of our finest lakes, where a large plant of saibling were made, they have not shown up.

Dr. David Starr Jordan, President Leland Junior University, in a recent article on the Salmon and Trout of the Pacific Coast, says :

“ Real trout there are none on our Atlantic coast, and salmon trout are likewise wanting, but the name salmon trout is often given to the brook trout, or charr, which has run out into the sea ; and it is also often given to another charr, a very large, coarse species, in which the red spots have faded out to a cream color, which is found in all the lakes from Alaska to Maine, across the northern half of our continent. This is the Great Lake trout (*Salvelinus namaycush*), and except for its large size and comparative coarseness, it would never be mistaken either for trout or salmon. The name salmon trout is wholly inapplicable to it. In the lakes of Greenland and the eastern part of British America, the European charr (*Salvelinus Alpinus*) is as abundant as it is in Europe—a fact which has been only lately made manifest, and even now there is some question whether some of those which are found in the lakes of New Hampshire have not some time or other been brought and planted there from Europe.”

There need be no question upon this matter. The first lot of saibling eggs ever brought into New Hampshire was in January, 1881. These were hatched at Plymouth, and all the fry were planted in Newfound lake, except a few which were retained at the hatchery.

About the same time a small lot was sent to Plymouth, Mass., and were kept at a private hatchery there.

The Records of the United States Fish Commission make no mention of any eggs of saibling ever being sent to Maine. Therefore it matters little whether this fish is closely allied, or identical with, the saibling of Germany ; the fact that its existence has been known in at least three widely separated lakes for a long term of years before the eggs of the European saibling were brought to this country, makes it an impossibility that it can be "a recent introduction from Europe."

There are now laid down in this hatchery one hundred and twenty-five thousand brook trout eggs. Eighty-five thousand land-locked salmon eggs, and seventy-five thousand eggs of the aureolus.

These eggs are all taken from very large wild fish ; the fry from such eggs are strong and healthy. Some of these eggs will be transferred to the Plymouth station.

BRISTOL STATION.

This has been the most successful year since this station was established. The five hundred and fifty thousand eggs left in the hatchery last winter were hatched with but a small percentage of loss, and most of the fry were planted in the lake here.

The work of securing the parent fish for this season's stock of eggs began October 24. The fish were unusually plenty on the spawning beds. They are all taken at night. By the aid of a light and a common dip or landing net they are taken from the spawning bed and placed in a large floating tank, where they remain until daylight comes, which stops the work of capturing them, when the work of taking the eggs begins. Over eight hundred thousand eggs were placed in the hatchery the 27th and 28th. The night of the 28th the fish were so plenty that enough were secured to yield nine hundred

thousand eggs. The tanks were not large enough to hold this large number of fish at one time, so the work of taking the eggs was commenced at ten o'clock and continued all night. As the hatchery here was filled, these eggs were taken to Ashland and Plymouth. As many more could have been taken the next night had there been any place to put them.

At a low estimate, five tons of fish were handled during the three nights that the work was carried on. It will be necessary to transfer a large number of the eggs in the hatchery to some of the other stations, as the capacity of this house is only five hundred and fifty thousand. An addition should be made doubling the capacity of the present building.

LACONIA STATION.

January 16, there were received at this station one hundred thousand lake trout eggs from Northville, Mich., donated by Col. M. McDonald, United States Commissioner on Fisheries. These, with the eggs transferred from Bristol and those secured at the station, making seven hundred and fifty thousand, were hatched, and seven hundred and ten thousand of the fry were planted in Winnisquam bay and Winnepesaukee lake, and the remainder in suitable ponds in the State. There are now four hundred thousand eggs laid down in the hatchery.

So far it has been impossible to secure eggs enough from the waters in this vicinity to fill the hatchery. The fish that are taken on the spawning beds are so small that it takes a large number to yield a hundred thousand eggs. The eggs now in the hatchery were all taken from fish in Winnisquam bay. A sufficient num-

ber will be transferred from Bristol and Plymouth to fill the house. The plants made in Lake Winnepesaukee are already showing up in the increased number of small trout taken by the fishermen. The white fish of this lake, locally called "shad-waiters," are not protected during their spawning season (November). Hundreds of them are now caught during the winter months with hook and line, affording a large amount of food, and yielding considerable revenue to the fishermen.

COLEBROOK STATION.

There were transferred to this hatchery twenty-five thousand eggs of the land-locked salmon. The young fry were planted in the tributaries of the First Connecticut lake. The former plants of salmon made in this lake showed up this season finely, many fine specimens weighing from four to six pounds being taken. The waters of these lakes are well adapted to this king of game fishes.

They are well stocked with minnows and small white fish (*Coregonus quadrilateralis*), known locally as "bill fish." The streams flowing into these lakes are free from sawdust, and afford fine spawning grounds for the adult salmon. An attempt will be made the coming season to make a plant in the second lake, as well as continuing the work in the lower lake. Thirty-five thousand brook trout were hatched and planted in the Dimond ponds and vicinity of Colebrook. There are now laid down in the hatchery one hundred thousand brook trout eggs, which were secured at Dimond and Greenough ponds. The trout in the larger Dimond pond are a peculiar variety of brook trout, and a very desirable fish to introduce into other waters of the State.

The fine fishing to be had in this vicinity attracts large numbers of fishermen from other States, some of whom bring their families and spend their whole vacation in this delightful section of the State, and every dollar spent by the State in keeping up the supply of game fishes is returned tenfold by the sportsmen who come here to enjoy the fishing and hunting.

KEENE STATION.

Eighty-three thousand brook trout and fifty thousand lake trout were hatched and distributed from this station. Twelve thousand five hundred of the brook trout were purchased and paid for by the Cheshire County Fish and Game League. There being no trout ponds near this station where eggs can be taken, one hundred thousand have been purchased for distribution in this part of the State; there will also be transferred to the hatchery one hundred thousand lake trout eggs from Bristol.

ASHLAND STATION.

At the last session of the Legislature an appropriation of six hundred dollars was made for building and equipping a fish hatchery at Ashland. Although the object of the hatchery was for the purpose of restocking Squam lake, the bill was so worded that it had to be built in the town of Ashland. The hatchery is a one story wooden building, 22 by 32, well built and painted. It has a capacity of five hundred thousand lake trout eggs. There are now laid down nearly five hundred thousand eggs taken at Bristol.

SQUAM LAKE.

This beautiful sheet of water is fast coming into notice as a great summer resort. The scenery around the lake

is not excelled by any other in New England. Many summer residences have already been erected upon its shores, and many more will be built in the near future.

To meet the demand for better fishing by the summer residents, it has been well stocked with black bass, which will soon afford an abundance of sport, as well as a large amount of food.

A large plant of lake trout was made this season, and arrangements have been made for a plant of half a million of young fry the coming year.

The lake has become so depleted by netting and spearing on the spawning beds that it is impossible to obtain breeding fish from its waters, and the plants for stocking it must come from other waters in the State.

The abundance of trout in Newfound lake enable this to be done at a very small expense.

FINANCIAL STATEMENT.

ASHLAND STATION.

Appropriation	.	.	.	.	.	.	\$600.00
Jan. 16. Paid E. F. Emerson	.	.	.	.	.	.	\$60.00
Oct. 1. H. H. Shephard	.	.	.	.	.	.	425.00
18. O. C. Thompson	.	.	.	.	.	.	55.12
21. F. L. Hughes	.	.	.	.	.	.	58.88
							<hr/> \$599.00
Balance	.	.	.	.	.	.	<hr/>\$1.00

PLYMOUTH STATION.

1891.

Dec. 1. Paid E. B. Hodge, super-							
intendent	.	.	.	.	.	.	\$108.84
1. D. H. McLinn, assis-							
tant	.	.	.	.	.	.	40.00

Nov. 13.	Paid A. Wheeler, black varnish . . .	\$9.60	
16.	J. A. Benton, 300 lbs. beef . . .	4.50	
16.	G. W. Ellis, labor at hatchery . . .	60.00	
16.	express . . .	3.15	
30.	H. Pike, labor and expenses . . .	3.65	
Dec. 1.	C. P. Sanborn, 50 days' labor and ex- penses taking land- loc'd salm'n Hebron	92.25	
		<hr/>	\$321.99
1892.			
Feb. 12.	Paid E. B. Hodge, superin- tendent . . .	\$108.34	
12.	D. H. McLinn, assis- tant . . .	40.00	
12.	freight on fresh meat	.50	
12.	cartage . . .	1.00	
1891.			
Dec. 28.	North Packing Co., fish meat . . .	2.08	
28.	freight and cartage .	1.50	
31.	freight and cartage on fish meat . . .	1.72	
1892.			
Jan. 16.	Webster, Russell & Co., sundries . .	2.58	
16.	freight on fish meat .	.78	
Feb. 3.	express on land- locked salmon eggs	4.50	
3.	transferring eggs Sun- apee to Plymouth .	4.00	
		<hr/>	\$167.00

April 1.	Paid E. B. Hodge, super- intendent . . .	\$108.34
1.	D. H. McLinn . . .	40.00
Jan. 16.	Flanders Bros., teams	3.75
8.	F. Mitchell, labor . .	.60
30.	freight and cartage . .	2.50
Feb. 5.	North Packing Co., fish meat . . .	5.00
11.	N. Boynton, wood . .	1.50
11.	balance fish meat bills, 1891 . . .	3.59
4.	express on Loch Leven trout eggs . .	3.80
4.	telegrams . . .	1.00
15.	J. B. Holmes, labor . .	1.00
15.	express . . .	.25
Mar. 1.	express on land- locked salmon eggs	2.45
1.	cartage fish meat . .	1.00
1.	M. C. Cox, 300 lbs. fish meat . . .	3.75
		<hr/> \$178.53
June 1.	Paid E. B. Hodge, super- intendent . . .	\$108.34
1.	D. H. McLinn, assis- tant . . .	40.00
April 14.	F. L. Hughes, land- lock'd salmon eggs	10.50
12.	express . . .	1.85
Feb. 12.	Burleigh & Adams, insurance . . .	4.00
Mar. 5.	express on land- locked salmon eggs	2.70

April 24.	Paid Bayley Bros., fish meat	\$5.36	
May 28.	Fiberwood Co., rent.	25.00	
28.	express bills	9.40	
30.	express on cans . . .	5.20	
27.	cement . . . . .	.25	
19.	express on cans . . .	1.00	
19.	C. J. Gould, new cans and repairs	17.90	
		<hr/>	\$231.50
Aug. 12.	Paid E. B. Hodge, super- intendent	\$108.34	
12.	D. H. McLinn, assis- tant	40.00	
12.	telegrams in May and June	2.25	
July 6.	rent of spring	5.00	
7.	J. L. Hughes, team . .	3.00	
7.	J. B. Varick & Co., wire screen	2.70	
6.	F. Mitchell, labor . .	2.00	
Aug. 1.	Spratt's patent fish meat	19.25	
6.	freight on fish meat .	3.96	
1.	fish meat	10.00	
		<hr/>	\$196.50
Oct. 1.	Paid E. B. Hodge, super- intendent	\$108.34	
1.	D. H. McLinn, assis- tant	40.00	
6.	express	1.60	
24.	A. Wheeler, varnish .	8.55	
		<hr/>	\$158.49
Total	. . . . .		<hr/>\$1,254.01

LACONIA STATION.

Nov. 13.	Paid O. H. Daniels . . .	\$12.45
Jan. 16.	express on lake trout eggs	6.05
Feb. 11.	O. H. Daniels . . .	216.78
April 6.	Philbrook Bros., cart- age	1.00
May 28.	R. N. Dana, use of boat	10.00
July 6.	Philbrook Bros., cart- age	9.25
Aug. 20.	O. H. Daniels . . .	137.52
20.	expense of transfer- ring eggs to Laconia . . .	1.10
		<hr/> \$394.15

SUNAPEE STATION.

Nov. 7.	Paid Mrs. A. B. Currier . .	\$18.65
Oct. 10.	Frank Merrill, labor . .	3.50
Nov. 13.	A. J. Cheney, 46 days' labor	69.00
27.	Morrison & Searles, provisions . . .	5.17
Dec. 1.	S. E. Bickford, 44 days' labor . . .	36.00
Jan. 16.	American Net and Twine Co. . . .	10.00
Mar. 7.	C. A. Knowlton & Co., camp supplies . .	22.71
7.	F. P. Jewett, wood . .	21.00
June 30.	R. F. Sargent, labor . .	154.00
July 14.	Claud Goings, labor on boats	4.00
Oct. 1.	R. F. Sargent, labor . .	32.50
		<hr/> \$376.53

KEENE STATION.

Jan. 18.	Paid expense of transferring eggs to Keene . . .	\$6.25	
Feb. 6.	G. A. Starkey, for trout eggs	66.00	
11.	A. Wheeler, varnish . .	2.80	
April 4.	expenses at Keene . .	5.00	
30.	G. A. Starkey, balance on trout eggs . . .	5.00	
		<hr/>	\$85.05

BRISTOL STATION.

1891.

Oct. 27.	Paid J. R. Sleeper, labor . .	\$3.00	
27.	M. Varney, team . . .	3.00	
Dec. 21.	J. R. Sleeper, labor . .	20.30	
22.	Elias Adams " . . .	12.00	
23.	E. T. Pike " . . .	26.90	
23.	H. E. Pike " . . .	4.50	
23.	C. N. Drake " . . .	24.49	
23.	Geo. H. Fowler, labor and sundries . . .	47.75	
Jan. 16.	American Net and Twine Co.	4.06	
Mar. 21.	S. D. Fellows, repairs . .	7.05	
May 19.	J. R. Sleeper, labor in hatchery . . .	58.55	
19.	express	1.00	
		<hr/>	\$212.60

COLEBROOK STATION.

1892.

July 6.	Paid A. C. Wallace . . .	\$27.88	
Aug. 16.	J. H. Dudley	8.25	
16.	A. C. Wallace, labor and expenses . . .	68.40	

Aug. 16. Paid W. T. Keyes, labor and expenses . . .	\$1.00	
	<hr/>	\$165.53

GENERAL EXPENSES OF THE COMMISSIONERS.

Paid E. B. Hodge, traveling and other expenses, November and December	\$64.45	
January and February	15.57	
March and April	23.50	
May and June	12.00	
July and August	5.05	
September and October	10.50	
Postage	13.00	
Services as Commissioner	100.00	
	<hr/>	\$244.07
Paid Geo. W. Riddle, services as Commissioner and expenses	340.46	
Paid W. H. Griffin, services as Commissioner and expenses	156.25	
Expenses at the hatcheries	2,487.87	
	<hr/>	
Total expenses for the year		\$3,228.55

GAME.

The rapid increase of the deer in the northern and eastern sections of the State is becoming more marked each year, and is attracting the attention, not only of our own sportsmen, but those from other States. They have been seen the past summer in nearly every county in the State. This is owing to the better protection afforded them, by a more rigid enforcement of the laws, and the willingness of the sportsmen to aid the Commission in this work.

It is to be hoped that the Legislature will reappropriate at least the balance left over from the appropriation

made two years ago. If this is done it will enable the Commissioners to carry on the good work they have been doing the past two years.

There are still a few moose left in the State, and a close season should be made, prohibiting the hunting or killing of them for at least five years. A few quail are found in the southern part of the State every year.

This year the attempt has been made to introduce them further north.

In May a large number of birds were turned out in the towns of New London and Newbury by Prof. J. D. Quackenbos and Colonel Hay. So far they have done well, and flocks of forty were seen in October in the vicinity of the place where they were liberated. It is somewhat doubtful if they survive our cold winters, unless they are protected to some extent by brush piles, where they can seek shelter, and food of some kind furnished them.

Our sportsmen will watch this experiment, and, if it proves successful, other attempts will be made to introduce them into other parts of the State.

Very few complaints have been made this past year of the violation of the game laws. This shows a better feeling in regard to protection than has ever existed before.

FINANCIAL STATEMENT OF EXPENSES.

1891.

Dec. 1. Balance of appropriation for 1891	.	\$285.90
1. Appropriation for 1891	.	600.00
		<hr/>
		\$885.90

1892.

Expenses of detectives	.	.	.	.	\$87.85
					<hr/>
Balance	.	.	.	.	\$798.05

RAILROADS.

Thanks are due to the Concord & Montreal, Boston & Maine, and the Maine Central railroads for favors received in the free transportation of young fish over their respective lines.

We desire to acknowledge our obligation to the United States Fish Commission for donations of eggs and courteous treatment received at the hands of the Commissioner of fisheries, Col. M. McDonald.

RECOMMENDATIONS.

We respectfully submit the following recommendations for the consideration of the Legislature :

The possession of undersized lobsters to be evidence to convict. That the law in relation to brook trout be amended so that they shall only be taken with hook and line. To enable the Commissioners to compel the owners of dams to build fishways over any dam that the public good demands. To enable the Commissioners, state detectives, and wardens to arrest without warrant any person caught in the act of violating the game and fish laws.

Col. George W. Riddle, of Manchester, who has so faithfully served for ten years on the Commission on Fish and Game, retired at the expiration of his second term in November.

On account of ill-health, he did not ask for a re-appointment. His valuable advice and services during his term of office have had much to do with the success of the Commission.

Respectfully submitted,

GEORGE W. RIDDLE,

ELLIOTT B. HODGE,

WILLARD H. GRIFFIN,

Fish and Game Commissioners.

PLYMOUTH, December 1, 1892.

APPENDIX.

APPENDIX.

REPORT OF B. P. CHADWICK, STATE FISH AND GAME DETECTIVE.

To the Fish and Game Commissioners:

GENTLEMEN, — I respectfully submit the following report as the result of my labors in enforcing the Fish and Game laws of the State for the year. I have made six prosecutions, three for violations of the game laws, and three for violations of the fish laws; five of the parties were convicted. The amount of fines in the several cases was \$190; this would seem to indicate an improvement as regards the observance of the laws when compared with previous years, still quite as many complaints have been sent me as in former seasons, but, owing to changes in the laws at the last session of the Legislature, I have found it very difficult to secure convictions.

I desire to call your attention to the construction of the lobster law in connection with the shipment of undersized lobsters to places beyond the state limits. During the early part of the season undersized lobsters were landed at Portsmouth by parties in vessels from Maine, and shipped by rail to New York. The owners were successful in getting one consignment through to their

destination, but the next vessel load that came did not fare as well. Through the efforts of the city marshal of Portsmouth, the officers in Massachusetts were notified when the train left Portsmouth at midnight, and the whole consignment was seized in Boston and dumped into the dock. The number seized was 2,560. Should the present law be amended, so as to make the possession of undersized lobsters an offence, it would greatly assist the officers in putting an end to transactions of this nature. The catchers of lobsters at Portsmouth, Rye, Hampton, and Seabrook seem to be determined to continue in the traffic of undersized lobsters, notwithstanding the fines they have been called upon to pay, and many thousands of small lobsters are mutilated for the purpose of supplying the hotels and boarding houses with the meat from the tails and claws. This business has been carried to such an extent that the chances of taking large sized lobsters are a thing of the past, and the indications are that we are soon to see the end of the lobster fisheries as a paying business, and that wholly caused by the folly and shortsightedness of the catchers. Lobster traps should be so constructed as not to retain the small ones. Could an act be passed to regulate the construction of the traps used to a certain limit of space between the slats, eighty per cent of all the small lobsters now destroyed would escape, and the catchers would eventually be the parties benefited by such an act. Complaints from the wholesale dealers and hand line catchers of smelt, as to the method of taking the same in Great Bay, have been sent me from no less than seven parties. Seining of smelt in March as they come upon the spawning grounds is a matter of serious consideration, when we consider the fact that several streams in Massachusetts, where smelt were formerly caught in abun-

dance, have been completely ruined so far as the catching of smelt is concerned, by the use of fine mesh nets upon the spawning grounds. The law in Massachusetts now prohibits the taking of smelt in nets, a wise act, but it came too late to save the smelt fisheries in many locations. Something may be judged as to the extent to which the fine mesh nets have been used in Great Bay, when it is known that in March smelt were offered by the catchers at the market of Mr. O. Downs in Portsmouth at the low price of four cents per pound, and he was obliged to inform the catchers that there was no sale for them even at that price, although sizeable smelt were selling at twelve cents per pound. The smelt offered for sale were so small that it required thirty-nine of them to weigh a pound. If it is economy to use nets in the taking of smelt, the only remedy for the condition to which the smelt fisheries of the Great Bay have been reduced, is to regulate the size of the mesh used, to the extent that the small fish shall have an opportunity to escape.

Respectfully yours,

B. P. CHADWICK,

Detective, State of New Hampshire.

FROM BULLETIN OF THE UNITED STATES FISH COM-
MISSION, 1892.

THE FISHERIES OF NEW HAMPSHIRE.

GENERAL REMARKS AND STATISTICS.

Compared with other New England States, the fisheries of New Hampshire have never been important, and in recent years have shown a serious decline. The coast line of New Hampshire is occupied by a single county, Rockingham, to which the entire fishery interests of the State belong.

Three tables covering the combined fisheries of the State are first presented. These give 365 persons engaged in the industry, with an invested capital of \$112,660, taking 4,354,568 pounds of products, valued at \$88,511.

50. — *Table of persons employed.*

HOW ENGAGED.	No.
On fishing vessels.....	141
In shore fisheries.....	194
On shore, in factories, fish-houses, etc.....	30
Total.....	365

51. — *Table of apparatus and capital.*

DESIGNATION.	No.	Value.
Vessels, fishing (tonnage 588.05)	15	\$32,000
Outfit		11,009
Boats	73	4,000
Apparatus of capture—vessel fisheries:		
Seines	7	3,700
Trawl lines and hand lines		12,251
Gill nets	27	324
Pots	200	300
Harpoons	6	50
Apparatus of capture—shore fisheries:		
Weirs	12	860
Haul seines	3	100
Gill nets	107	1,246
Trawl lines and hand lines		920
Pots	2,040	2,500
Shore property		32,100
Cash capital		11,000
Total		\$112,660

52. — *Table of products.*

SPECIES.	Pounds.	Value.
Alewives, fresh	140,400	\$3,080
Cod, fresh	1,178,635	23,222
Cod, salted	195,000	5,325
Cusk, fresh	33,500	350
Eels, fresh	12,000	1,200
Haddock, fresh	1,470,055	25,071
Haddock, salted	90,000	1,112
Hake, fresh	227,205	2,353
Hake, salted	110,000	1,400
Halibut, fresh	87,600	6,132
Herring, fresh	19,800	195
Mackerel, fresh	21,860	2,010
Mackerel, salted	24,600	2,359
Menhaden, fresh	501,000	2,325
Perch or cunners, fresh	4,000	200
Pollock, fresh	7,000	70
Sea bass, fresh	500	40
Shad, fresh	88	3
Smelt, fresh	46,000	3,600
Swordfish, fresh	25,100	1,159
Swordfish, salted	3,400	180
Miscellaneous fish, fresh	10,000	340
Lobsters, fresh	137,175	6,415
Clams (soft), fresh	*3,000	150
Oil	†6,370	260
Total	4,354,568	\$88,511

* 300 bushels.

† 849 gallons.

THE VESSEL FISHERIES.

It is in the vessel fishery that the principal decline has occurred, the number of craft being 23 in 1880 and only 15 in 1889. The shore fishery is the most important branch in which the vessels of the State engage, 11 out of the entire number following this fishery to a greater or less extent. The fishery for mackerel with seines, nets, and lines ranks next, employing 7 vessels. The market, halibut, swordfish, menhaden, and lobster fisheries have a single vessel in each. The details of tonnage, value, and crew for each fishery are brought out in the following table.

53. — *Table showing the number of vessels engaged in each fishery in New Hampshire in 1889, together with their tonnage, value, and number of crew.*

FISHERIES.	No. of vessels engaged.	Net tonnage.	Value.	Number and nationality of fishermen.			Total.
				Americans.	British provincials.	All others.	
Market.....	1	68.93	\$2,800	6	4	2	12
Halibut.....	1	68.93	2,800	6	4	2	12
Mackerel, caught with seines....	4	186.91	11,700	43	4	1	48
Mackerel, caught with nets.....	1	14.63	1,000	5	.....	.....	5
Mackerel, caught with lines.....	2	42.42	1,900	12	.....	.....	12
Shore.....	11	337.06	16,400	88	4	4	96
Swordfish.....	1	30.93	1,600	9	.....	.....	9
Menhaden.....	1	89.63	6,000	16	.....	.....	16
Lobster.....	1	19.41	1,300	6	.....	.....	6

From the next table is seen that, taking the value of products as a basis, the shore vessel fishery yields about three fourths of the total catch, followed by the halibut, mackerel, menhaden, market, swordfish, and lobster. If quantities only are considered, the menhaden fishery ranks second and the market fishery third.

51. — *Table showing by fisheries and species the yield of the vessel fisheries of New Hampshire in 1889.*

FISHERIES AND SPECIES.	Pounds.	Value.
Shore:		
Cod, fresh.....	639,355	\$14,182
Cod, salted.....	195 000	5,325
Cusk, fresh.....	33 500	350
Haddock, fresh.....	\$36 025	14,821
Haddock, salted.....	90 000	1,112
Hake, fresh.....	227,295	2,353
Hake, salted.....	110,000	1,400
Pollock, fresh.....	7,000	70
Total.....	2,128,175	\$39,613
Market:		
Cod, fresh.....	103,900	,800
Halibut:		
Halibut, fresh.....	87,600	6,132
Mackerel:		
Mackerel, fresh.....	19,700	1,770
Mackerel, salted.....	24,600	2,359
Total.....	44,300	\$4,129
Swordfish:		
Swordfish, fresh.....	25,100	1,159
Swordfish, salted.....	3,600	180
Total.....	28,700	\$1,339
Menhaden:		
Menhaden, fresh.....	464,000	2,100
Crustacean:		
Lobsters.....	14,175	645
Grand total.....	2,870,850	\$55,758

The following table shows the quantity and value of each species taken in the vessel fisheries of New Hampshire :

55. — *Table showing by species the yield of the vessel fisheries of New Hampshire in 1889.*

SPECIES.	Pounds.	Value.
Cod, fresh.....	743,255	\$15,982
Cod, salted.....	195 000	5,325
Cusk, fresh.....	33,500	350
Haddock, fresh.....	826,025	14,821
Haddock, salted.....	90,000	1,112
Hake, fresh.....	227,235	2,353
Hake, salted.....	110 000	1,400
Halibut, fresh.....	87,600	6,132
Mackerel, fresh.....	19,700	1,770
Mackerel, salted.....	24,600	2,359
Menhaden, fresh.....	464,000	2,100
Pollock, fresh.....	7,000	70
Swordfish, fresh.....	25 100	1,159
Swordfish, salted.....	3,600	180
Lobsters, fresh.....	14,175	645
Oil.....	6,370	260
Total.....	2,877,220	\$56,018

From the foregoing tables the following average figures for the vessels of New Hampshire may be deduced: The average tonnage is 39.20, the average value per ton is \$54, the average value of vessels is \$2,133, the average value of apparatus and outfit is \$1,851, the average number of crew is 9, the average value of catch per man is \$397, the average value of catch per vessel is \$3,734, the average value of catch per net ton is \$95, and the average value of catch for each \$100 invested in the vessel fishery is \$95.

Cod is by far the most important species taken in the vessel fisheries, representing 38 per cent of the stock. Haddock yields 28 per cent, halibut 11 per cent, and hake and mackerel 7 per cent each.

In the table showing the vessel catch of fish by apparatus the prominent position of hand lines and trawl lines as means of capture will be at once apparent, more than three fourths of the quantity and about seven eighths of the value accruing from this source. Seines are the next important apparatus, followed by harpoons and nets.

56. — *Table showing by apparatus and species the yield of the vessel fisheries of New Hampshire in 1889, exclusive of the lobster fisheries.*

APPARATUS AND SPECIES.	Pounds.	Value.
Lines:		
Cod, fresh.....	743,255	\$15,982
Cod, salted.....	195,000	5,325
Cusk, fresh.....	33,590	350
Haddock, fresh.....	826,025	14,821
Haddock, salted.....	90,000	1,112
Hake, fresh.....	227,295	2,353
Hake, salted.....	110,000	1,400
Halibut, fresh.....	87,600	6,132
Mackerel, fresh.....	8,700	780
Pollock, fresh.....	7,000	70
Total.....	2,328,375	\$48,325
Gill nets:		
Mackerel, fresh.....	3,000	\$280
Seines:		
Mackerel, fresh.....	8,000	710
Mackerel, salted.....	24,600	2,359
Menhaden, fresh.....	461,000	2,100
Total.....	496,600	\$5,169
Harpoons:		
Swordfish, fresh.....	25,100	\$1,159
Swordfish, salted.....	3,600	180
Total.....	28,700	\$1,339
Grand total.....	2,856,675	\$55,113

THE SHORE FISHERIES.

The shore fisheries of New Hampshire yield about one half as much products as the vessel fisheries and rather more than half the value of the latter. The 194 shore fishermen have \$4,170 invested in boats and \$5,626 in apparatus, as shown in the second table for the State, and in 1889 took the following products :

57. — *Table showing by species the yield of the shore fisheries of New Hampshire in 1889.*

SPECIES.	Pounds.	Value.
Alewives, fresh.....	140,400	\$3,080
Cod, fresh.....	435,400	7,240
Eels, fresh.....	12,000	1,200
Haddock, fresh.....	644,000	10,250
Herring, fresh.....	19,800	195
Mackerel, fresh.....	2,160	240
Menhaden, fresh.....	37,000	225
Perch or cummers, fresh.....	4,000	200
Sea bass, fresh.....	500	40
Shad, fresh.....	88	3
Smelt, fresh.....	46,000	3,600
Miscellaneous fish, fresh.....	10,000	300
Lobsters, fresh.....	123,000	5,770
Clams (soft), fresh.....	3,000	150
Total.....	1,477,348	\$32,493

The foregoing table shows that the average value of the products taken by the shore fishermen of New Hampshire is \$167 per man, \$774 per each \$100 invested in boats, and \$580 per each \$100 invested in apparatus. It is also seen that 32 per cent of the income of the shore fishermen is obtained from the sale of haddock, 22 per cent from cod, 17 per cent from lobsters, 11 per cent from smelt, 9 per cent from alewives, 4 per cent from eels, and 1 per cent from mackerel, menhaden, herring, perch, and minor species.

The importance of the various fishing devices employed in the shore fisheries of the State is exhibited in the following table, in which the quantity and value of each species taken in each form of apparatus are given.

58. — *Table showing by apparatus and species the yield of the shore fisheries of New Hampshire in 1889.*

APPARATUS AND SPECIES.	Pounds.	Value.
Weirs:		
Alewives, fresh.....	133,200	\$2,960
Perch, fresh.....	4,000	200
Sea bass, fresh.....	500	40
Shad, fresh.....	88	3
Smelt, fresh.....	1,000	100
Total.....	138,788	\$3,303
Seines:		
Alewives, fresh.....	7,200	120
Gill nets:		
Herring, fresh.....	19,800	195
Mackerel, fresh.....	2,160	240
Menhaden, fresh.....	37,000	225
Total.....	58,960	\$660
Trawl lines and hand lines:		
Cod, fresh.....	435,400	7,240
Haddock, fresh.....	644,000	10,250
Smelt, fresh.....	45,000	3,500
Miscellaneous, fresh.....	10,000	300
Total.....	1,134,400	\$21,290
Spears:		
Eels, fresh.....	12,000	1,200
Miscellaneous:		
Lobsters.....	123,000	5,770
Clams (soft).....	3,000	150
Total.....	126,000	\$5,920
Grand total.....	1,477,348	\$32,493

Examination of the table shows that lines are to be credited with 65 per cent of the stock, weirs with 10 per cent, spears with 4 per cent, gill nets with 2 per cent, seines with 1 per cent, and pots and other minor apparatus with 18 per cent.

REPORT OF THE CONFERENCE OF THE FISH AND GAME COMMISSIONERS

OF THE SEVERAL NEW ENGLAND STATES, HELD IN ROOM
A, AT THE MASSACHUSETTS STATE HOUSE, BOSTON,
TUESDAY, NOVEMBER 24, THE PROCEEDINGS OPENING AT
ELEVEN A. M.

Edward A. Brackett, of Winchester, chairman of the Massachusetts commission, presided. There were also present the following commissioners from other States :

Connecticut — James A. Bill, of Lyme ; W. S. Downes, of Birmingham ; Dr. William L. Hudson, of Saybrook ; Robert G. Chalker, of Saybrook.

Maine — E. M. Stillwell, of Bangor ; Henry O. Stanley, of Dixfield.

New Hampshire — E. B. Hodge, of Plymouth ; W. H. Griffin, of Henniker.

Vermont — Herbert Brainard, of St. Albans ; F. H. Atherton, of Waterbury.

Rhode Island — J. M. K. Southwick.

The conference was called to order by the chairman, Commissioner Brackett, of Massachusetts.

The CHAIRMAN. Gentlemen, I will now read to you the resolve under which the commissioners of Massachusetts were required to enter into consultation with the commissioners of the other New England States. It is as follows :

[SENATE NO. 265.]

COMMONWEALTH OF MASSACHUSETTS.

In the Year One Thousand Eight Hundred and Ninety-one.

RESOLUTIONS RELATING TO THE ADOPTION OF UNIFORM LAWS
FOR THE PROTECTION OF FOOD FISHES IN THE NEW ENGLAND
STATES.

WHEREAS, There are great variations in the laws of Maine, New Hampshire, Vermont, Rhode Island, Connecticut, and Massachusetts, regarding the protection of food fishes, and as a law the same for all

the States herein named would be of benefit to all interested, therefore be it

Resolved, That the Senate and House of Representatives of the Commonwealth of Massachusetts, in General Court assembled, request the Commissioners on Inland Fisheries and Game of the Commonwealth, to solicit a conference with the proper authorities of the States of Maine, New Hampshire, Vermont, Rhode Island, and Connecticut, and urge the adoption of uniform laws to protect the food fishes of the States named.

Resolved, That the Commissioners on Inland Fisheries and Game be and are hereby requested to report the result of their conference to the General Court of the year eighteen hundred and ninety-two.

Resolved, That copies of these resolutions be forwarded to the governors of the States of Maine, New Hampshire, Vermont, Rhode Island, and Connecticut.

Gentlemen, this is the object for which this meeting is called. I also desire, when we are through with this particular matter, to discuss and interchange ideas and opinions, as a general conference, not authoritatively and not as a matter coming directly under this resolve, upon other subjects connected with general fish culture and game. I thank you very heartily, in behalf of the State, for responding to the invitation that has been extended to you, and trust that hereafter, without any promptings from the Legislature, we shall have an annual meeting of the New England commissioners. It seems to me desirable that, in the interest of the objects in which we are all engaged, such conferences should be held. We will now proceed at once to the subject under discussion, and if it be your minds, we will take up the question of trout.

Commissioner SOUTHWICK. Mr. Chairman, I would say for myself that I do not represent the Game Law Commissioners of Rhode Island. It is simply as a fish commissioner of that State that I am present.

The CHAIRMAN. This is simply a general conference.

Commissioner SOUTHWICK. There are also two other commissioners from our State. I do not know whether they were invited or not.

The CHAIRMAN. They were invited, sir. We will take up the subject of trout.

TROUT.

Our law (Massachusetts) stands in this way :

Whoever takes a trout, land-locked salmon, or lake trout between the first day of September and the first day of April, or buys such fish taken in this commonwealth between said dates, or takes a trout, land-locked salmon, or lake trout, with a net or salmon-pot, at any

season of the year, shall forfeit not less than five, nor more than twenty dollars for each fish so taken. (Public Statutes, chapter 91, section 51; Acts of 1884, chapter 171.)

Whoever sells, or offers or exposes for sale, or has in his possession, a trout, land-locked salmon, or lake trout, except alive, between the first day of September and the first day of April, shall forfeit, for every such fish taken in this commonwealth between said dates, ten dollars; and the possession of any such fish between said dates shall be *prima facie* evidence to convict. (Public Statutes, chapter 91, section 53; Acts of 1884, chapter 171.)

Chapter one hundred and seventy-one of the Acts of the year eighteen hundred and eighty-four is hereby amended by adding at the end of the first section the words: except in the counties of Berkshire, Franklin, Hampshire, and Hampden, where such time shall be between the first day of August and the first day of April, under a penalty of not less than ten and not more than twenty-five dollars for each and every violation thereof; so that the section shall read as follows: "The time within which any person is forbidden to take, sell, offer or expose for sale or to have in his possession a trout, land-locked salmon, or lake trout, by sections 51 and 53 of chapter 91 of the Public Statutes, shall be between the first day of September and the first day of April, except in the counties of Berkshire, Franklin, and Hampshire, where such time shall be between the first day of August and the first day of April, under a penalty of not less than ten and not more than twenty-five dollars for each and every violation thereof." (Acts of 1890, chapter 193.)

I have here a few copies of the law of Massachusetts that I will distribute among you. They contain abstracts of our fish and game laws. I should be very glad to hear from any of you on this subject.

Commissioner BRAINARD. I would state, Mr. Chairman, that in the State of Vermont our close season was originally from May 1 to September 1. We found that some of our sister States had a different close season, making it, as you have it now, from April 1 to September 1, and we found that it furnished quite an inducement to people to fish through the ice. We have a great many ponds in Vermont that are frozen over in April; and we found that, by making the open season from April 1 to August 1, the people would go onto the ice, fish through the ice, and in that way catch a good many trout,—in fact, almost deplete the waters. The fish had been there all winter. When the bright sun came out in the middle of the day, the fish would come to the holes and would congregate in these holes. The people would take them out by the thousands. Hence we had the law amended, so that it now reads from May 1 to September 1. We should have lost all of our trout if we had not done so.

Commissioner HODGE. Mr. Chairman, speaking for New Hamp-

shire, I can say that we find the same difficulty arising there. Our law for many years was from May 1 to September 30, for the open season. Unfortunately, at the last session of our Legislature a bill was, to use a word sometimes employed up in the Granite State, "squirreled" through in the last days of the session, when everything was in confusion, changing the laws that we had found to work satisfactorily, and making our close season from September 15 to April 15. Now we find the same trouble that my friend from Vermont found. Our mountain ponds at that season of the year, April 15, are covered with ice from one to two and a half feet thick. Last season hundreds of trout were taken through the ice, — I won't say illegally, because the law allowed it, but in an unsportsmanlike manner; and unless we can place our law back to May 1, it means destruction to our trout fishing in all our mountain ponds. I know that a strong effort will be made, and I have no doubt that it will succeed, and that we shall place our law, at the next session of the Legislature, where it was before. We had the old law upon our statute books ten years, and found it worked satisfactorily. While October 1 was rather late, still we did not find much trouble from that. The reason why the open season was kept up to October 1 was this: Many of our sportsmen wished to go into our northern woods for the deer hunting at that season of the year. They also liked to change their bill of fare to a little mess of trout once in a while. There was no fishing to any extent done in our ponds during the month of September, except by the few sportsmen who are on their annual trips to our woods after deer. As I said before, a strong effort will be made to change our law from April 15 to May 1. That is early enough for us, and in reality it is too early. For my own part, I should rather see it May 15 than May 1.

The CHAIRMAN. Dr. Hudson, how is it in regard to Connecticut?

Commissioner HUDSON. I was going to say, gentlemen, that I suppose you are well aware that I am not a fish commissioner; I am a shell-fish commissioner only. I will say that our law varies entirely from yours in regard to trout. Our law only allows the taking of trout between April 1 and July 1. The reason for that is found in the fact that our streams get very low in the summer, and nearly dry up; and it was found, under the old system, that trout were taken by little nets in the holes when they accumulated in the dry weather. So now for a number of years our law has remained April 1 to July 1. Every time an attempt has been made to change it, as has been done at almost every session of the Legislature, the same men, men who are satisfied that the present law is for the best interest of both the State

and the anglers, go up in a body and insist on the law remaining as it is. We also have a law, as I presume all of you have, that no trout shall be sold under six inches in length. If a man take a trout under six inches in length, he may possibly eat it, but he cannot sell it.

Commissioner BRAINARD. In Vermont one cannot take such a trout without being liable to a fine.

The CHAIRMAN. There has been more or less effort to have such a law in Massachusetts, and I think one should be enacted. A trout six inches long is a very small trout.

Commissioner HODGE. Our limit in New Hampshire is five inches, which is altogether too small, although I had a hard fight to get even that limit established. The argument I used before the committee was what you might call a "knock-down one." Instead of making a speech, I took three trout and a pair of scales before the committee. These trout were four, five, and six inches long. I asked the committee to estimate the weight of the four-inch trout, which was given as from one to two ounces by the whole committee. The actual weight of a four-inch trout from our mountain streams is just one quarter of an ounce; of a five-inch trout one half an ounce, and of a six-inch trout one ounce.

The CHAIRMAN. Do any of the Connecticut commissioners desire to say anything further on this subject?

Commissioner DOWNS. I think our law (Connecticut) provides for a six-inch trout. It is unlawful to have them in our possession, without regard to eating or anything else.

Commissioner HUDSON. No; they can eat them, but they cannot sell them. If our seasons continue as they have been for the past few years, having such a late fall every season and such a very late spring, it may be that we will have to change the law, and make it later even than April 1. For several seasons we have had a late fall and open weather following, and in the spring time it has been very close and cold up to April 1. Some people believe, if the seasons continue so late that the brooks are frozen up and coated with ice, it would be better to change the law. There has been for the last two or three years a movement to change it practically to April 15. It is not much use fishing in Connecticut after July 1, because the streams get so low. The trout fishing in Connecticut has been excellent for two or three years.

Commissioner DOWNS. The last two seasons—we have had two wet summers—there has been extra good fishing.

The CHAIRMAN. I suppose it is the same in Connecticut as in

other New England States; you have your good and your bad seasons.

Commissioner DOWNS. I suppose all the States provide that trout shall be taken with the hook? That is, they don't allow any dynamite, nets, or anything of that kind?

The CHAIRMAN. Yes, sir.

Commissioner DOWNS. I should think a dry season would have a very bad effect on the fish that were planted the previous spring.

Commissioner HUDSON. It seems to me obvious, Mr. Chairman, that the State of Maine could not well have the same laws in regard to the taking of trout as the State of Connecticut or Rhode Island. Trout fishing is a very important industry there. An immense quantity of money is brought into the State by sportsmen, and the State has such efficient fish commissioners that they manage to do the settling up without any regard to how many fish the sportsmen take. I should like to hear from Mr. Stillwell.

Commissioner HODGE. I do not think there is as much importance attached to the close of season as the opening. At the close of the season there is very little attention paid to the capturing of trout in our State. I suppose it is the same throughout New England.

The CHAIRMAN. It is the same here.

Commissioner HODGE. But it does seem to me as though we might have a uniform law in New England for the opening day. I know you have a different opening day in your State (Massachusetts) than we do in New Hampshire, but your trout would only be the better if your season opened later.

The CHAIRMAN. The trouting fever takes possession of our sportsmen early in the season, but generally passes off with the hot weather, except with those who go farther north.

Commissioner HUDSON. I would say that I had quite a conversation with Mr. Stillwell on these matters last evening. He said that the laws of Maine were just right, and that, if any other States wished to adopt them, it would be perfectly satisfactory to them.

Commissioner STILLWELL. Our laws are well adapted to our people. We have obtained them by hard fighting. We are a border State, and are fighting all the time. I question whether our laws would do for you. You do not understand border warfare as well as we do.

The CHAIRMAN. Would you be good enough to state what your law on trout is?

Commissioner STILLWELL. The close season is from October 1 to May 1.

Commissioner STANLEY. Except for citizens of the State. Citizens of the State may fish from February until May at their homes.

Commissioner STILLWELL. But during that time and all through the year we have to fight the users of nets and dynamite.

Commissioner STANLEY. There is no fishing in Maine before the middle of May.

Commissioner DOWNS. Fishing in Connecticut is almost entirely in streams, — in small streams, too. We have no lakes to speak of. In Maine, Vermont, and New Hampshire, when the sportsmen begin to fish, it is in the lakes and ponds, and is vastly different from the fishing we have. Our fishing is when the streams are high, in the spring of the year. We do not have many sportsmen who come from outside. In fact, most of the fishing in the State of Connecticut is done a day at a time, whereas in other New England States, where there are fishing lakes and fishing ponds, a man spends one or more weeks, as he can find time; and the Connecticut laws for trout fishing must necessarily be very different from those of other States. Our fishing is likely to be local, by people who live within ten or fifteen miles of a trout stream, and go and fish one day.

Commissioner HUDSON. I do not wish to convey the idea that there are no outsiders. There are people who come from New York.

Commissioner DOWNS. They come for one or two days, and that is all. They do not fish in the same place for those two days; but in one stream one day and another stream the next. In July or August they go to Vermont, Maine, or Canada, and put in two weeks. Our fishing, so far as trout is concerned, is local. A man goes out in the right part of a day, and if he gets eight or ten trout he does well.

The CHAIRMAN. What amount of money do you estimate is brought into Maine by tourists during the fishing and shooting season, Mr. Stillwell?

Commissioner STILLWELL. It is estimated by millions.

The CHAIRMAN. How about New Hampshire, Mr. Hodge?

Commissioner HODGE. I cannot speak as to the amount. We consider that our fishing and shooting is one of the greatest inducements that we can offer summer visitors. It is well known that the amount of money brought into New Hampshire by tourists runs away into the millions every year. This our people all admit.

Commissioner STILLWELL. I said to the superintendent of one of our largest railroads, "If I should put some powder into Moosehead

lake that would exterminate all the fish, what would be the result?" He replied, "Mr. Stillwell, we should have to stop running our road."

The CHAIRMAN. Mr. Hodge, how many hatching houses for the propagation of fish have you in New Hampshire?

Commissioner HODGE. We have six hatcheries now in operation, and an appropriation standing on the books at the state house for another one.

The CHAIRMAN. Mr. Stillwell, how many hatcheries have you in Maine?

Commissioner STILLWELL. We have four or five run by the State. We pay for ours out of the appropriation. We have the eggs ourselves. Then we have intimate connection with the United States hatcheries. For instance, this year we have eighty thousand salmon, boarded by the United States. We have transported those salmon twenty miles, at a loss of only sixteen thousand out of eighty thousand.

The CHAIRMAN. How many did you carry in a can?

Commissioner STILLWELL. Fishes of that size we could not carry more than two hundred. But spring-hatched fish, little fish, we could take four thousand or five thousand and transport them fifty or one hundred miles with ice, etc.

The CHAIRMAN. Has Rhode Island anything to offer in regard to trout laws?

Commissioner SOUTHWICK. I can say very little in regard to trout in Rhode Island. We unfortunately have not many trout streams. We have two or three hatcheries that are being quite successfully carried on by private individuals, but none by the State. The fish are planted in some of the rivers and ponds of the State.

Commissioner STANLEY. You asked how many hatcheries we have, Mr. Brackett, in Maine. We have eight.

The CHAIRMAN. Those are paid for by the State?

Commissioner STANLEY. No, sir; some of them are paid for by private parties and clubs.

The CHAIRMAN. The State has how many of its own?

Commissioner STANLEY. The State owns six that are run independent of clubs.

Commissioner STILLWELL. Our State has temporary, tumble-down affairs, built at small expense, and devoted to hatching. There is one point I might mention. There are two classes of fish raised in our State, — those fed on liver and lights ground up fine, and those

fed on maggots from spoilt meat. Those fed on maggots are larger than those fed upon liver and lights, perhaps one third or one quarter larger; they grow more rapidly, and seem to be the lustier fish. It is not a very charming industry, the breeding of these maggots for this purpose, but the fish grow very rapidly when thus fed. They are carefully preserved, these flies, the blue-bottle flies that we all seek so to kill. We have to watch the male and female flies as carefully as if they were blooded stock. As fish food there is nothing equal to the maggot. The lights we boil first, in order to have them ground into pulp.

The CHAIRMAN. Does anyone wish to say anything more in regard to trout? If not, we will take up the subject of shad. Is there anything to be said, gentlemen, upon the subject of shad?

SHAD.

Commissioner HUDSON. You live on the Merrimack, Mr. Chairman; how is it there as to shad?

The CHAIRMAN. They are disappearing, growing less in all waters south of the Merrimack. How are the shad in Maine, Mr. Stillwell?

Commissioner STILLWELL. There is but little in regard to shad worth mentioning or trespassing upon your time with. Mr. Mather has written us from year to year, and asked whether we have met with any success in passing shad through our fishways. Up to last year we had to state that we had never known shad to pass through our fishways. But this last year some very large shad were found in the fishway at Bangor. As some changes have taken place in this fishway, in the lower compartments, letting in some light and bottoming it with stone, we attribute the passage of the fish to that change. Eight very large shad were seen in the upper compartments of the fishway this last year. They were not timid at all, and they passed through and ascended the river. Some very large shad have been taken above the Bangor fishway. That is all our experience for the last year or two, worth relating.

The CHAIRMAN. What are the laws of Maine in regard to taking shad? Are there any changes?

Commissioner STILLWELL. There is nothing but the same old law.

Commissioner SOUTHWICK. I have heard of one quite interesting phenomenon, perhaps not generally known in relation to shad. There were six hundred large roe shad taken in the Chesapeake in a week during this month, — something unknown before in the history of the country.

The CHAIRMAN. They probably were fish on their way towards the spawning grounds.

Commissioner SOUTHWICK. I do not know. This was on the Virginia shore.

The CHAIRMAN. Now, in regard to salmon.

SALMON.

Commissioner STILLWELL. I have nothing new in regard to salmon to report.

The CHAIRMAN. Dr. Hudson, what are the laws in regard to the taking of salmon in the Connecticut river?

Commissioner HUDSON. The great run of salmon in the Connecticut river was in 1878. Before the United States Fish Commission was formed, the commissioners of Massachusetts, Maine, and Connecticut, — I have forgotten whether, in the very early part of it, the other New England States were connected with us, but they were afterward, — had an arrangement whereby we purchased our young salmon in Canada of Commissioner Wilmot. Finally we thought we could raise our own fish; and Massachusetts, New Hampshire, Vermont, and Connecticut combined to make a grand club on the Connecticut river.

The CHAIRMAN. Those eggs were taken from Bucksport?

Commissioner HUDSON. Those eggs were taken from Bucksport. We put about one million young fish into the tributaries of the Connecticut river. We were confident that the mature fish would return, because we had heard of the young ones more or less during the intervening years; and four years later, in 1878, we tried very hard to have a law passed by the Connecticut Legislature protecting these salmon. But we were ridiculed, were told that the thing was an absolute farce, that there never would be another salmon seen in the Connecticut; and nobody paid any attention to our request. Soon after that I had record of about five hundred full-grown salmon taken. They were considered great prizes, and were sold in the New York and Boston markets at a dollar a pound. From that time on a few salmon have been taken in the Connecticut river, but there never has been any great run since.

The CHAIRMAN. It is, in your judgment, a fact, then, that the plant made in the Connecticut river was successful so far as the action of the commissioners was concerned, but the fishermen destroyed the plant.

Commissioner HUDSON. There is no question about that, I think.

Commissioner DOWNS. We caught two in our river a couple of years ago, — one weighing sixteen pounds, and one twenty.

The CHAIRMAN. Your law does not prohibit taking salmon?

Commissioner DOWNS. I think not, no; they are so few and far between. The fishermen at the mouth of the Connecticut river now take quite a number of salmon in their nets. Last spring there were quite a number captured that I saw myself.

The CHAIRMAN. From your knowledge and experience, Dr. Hudson, in regard to the planting of salmon in the Connecticut, do you understand that, if they had been let alone, the river would have been stocked with them?

Commissioner HUDSON. Well, that is another thing entirely, because the question immediately arises, What would have become of them if none had been caught? The water is not cool enough there for them to breed. Unless they could find some breeding streams, they would all die out in the Connecticut, as they would anywhere else.

The CHAIRMAN. They pass over the fishway at Lawrence without any difficulty.

Commissioner HODGE. Is it not a fact that salmon have been seen almost every year as far up as Bellows Falls?

Commissioner HUDSON. I was not aware of it; it may be so.

Commissioner HODGE. It has been so reported to me.

Commissioner DOWNS. Isn't there some difference in the location of the fishway at Lawrence and in the others?

The CHAIRMAN. Yes, a difference only in the mouths of the fishways. All kinds of fish pass up the Merrimack river without any difficulty. I would say here, gentlemen, that the owners of the dam, or the board of directors of the Holyoke company, informed me that in the course of a year or two they were going to build a stone dam across the river. They came to me to know about fishways, and said that at the proper time they would build a fishway into the stone dam in such a way that the mouth of it would be near the dam. I have their assurance that such will be the case. There may be a chance still to open the river for shad. In that case it would be proper. Undoubtedly shad would go over if the fishway were built into the dam, running up stream, and the end of it coming out near the dam.

Commissioner DOWNS. There was some gentleman, my impression is that he was from New Hampshire, who wrote quite an article recently on the fishways at Lawrence and Holyoke; and, as near as I can remember, his conclusion was that the mouth of the fishway at

Holyoke was in such a position that it was impossible for the shad to find it.

The CHAIRMAN. There is undoubtedly some truth in that. As the dam at Holyoke is located, it is impossible to make the fishway turn back to the extent we turn it back at Lawrence. I put in the fishway at Lawrence against the judgment of the engineers, who said it would not be likely to stand. It has stood perfectly. Now, if there is nothing further to be said on this subject, I should like the opinion of the different commissioners in regard to the passage of a law enabling people who breed trout to sell them at seasons of the year when their sale is prohibited by law. What, in your opinion, would be its result upon the propagation of trout, and the cultivation of trout in wild streams? Mr. Hodge, will you give us your opinion?

Commissioner HODGE. I regard this as an important subject. I understand such a law will be asked for in this State and in New Hampshire at our next session. I do not, for my part, see any way in which such a law can be placed upon our statute books without annulling the protection we now give to brook trout. I understand that one of the breeders in this State proposes to tag the cultivated trout. I do not understand in what way that can be done so as to afford any protection, or so as to prohibit any one else from attaching those tags to wild trout. Perhaps there are none of us here present but can tell at a glance a wild from a cultivated trout. But how many people are there in the State who can do that? It is almost an impossibility for any ordinary man to distinguish between the two; and, with such a law as is proposed, it would be opening the doors wide, and any person could take a wild trout and sell it for a cultivated trout. I see no way to prevent such a result. I know that, so far as we in New Hampshire are concerned, we shall fight that bill if it is presented. No doubt we can easily defeat it in New Hampshire, and I hope the same will be done elsewhere.

The CHAIRMAN. Our law forbids the sale of trout before April 1, but says that people who cultivate or maintain trout may take them how and when they please, but shall not offer them for sale for food during the time they are prohibited by law. Now, the word "maintain" covers a very large ground. There are two ways in which trout may be increased. One is by artificial propagation, the other is by increase in the natural way. In other words, you have a stream on which you post a notice forbidding people fishing on it. You have a right to do so. By the laws of Massachusetts you may allow fish to increase in it. You are maintaining them. You may take them and

sell them during the open season. What is to be gained by this change of law? All States adjoining that are raising trout could throw them into our market. If no change is made in the other States, of course all persons who cultivate trout in other States could send them to our markets. It would become a dumping ground, and prices would go down. I can see no way, if this law is passed, to protect trout in the streams. It is desirable that the commissioners should express themselves freely on this question, because it has its relations to uniform laws.

Commissioner SOUTHWICK. It seems to me that it is of the utmost importance that every encouragement possible should be given to those who propagate fish. It seems to me that every encouragement possible should be given to those who, upon their own land, cultivate fish roes for increase, for the purpose of putting into streams and other waters; and it strikes me as being a very arbitrary law that seeks to prevent a man from selling what he raises on his own domain. If he catches them in public waters, it is perhaps a different thing. Besides that, it seems to be absolutely essential for propagation that there should be no such law. If parties are going to be discouraged from raising trout, they will hardly want to go into the business; and the more there are in the business the better it pays, and if it appears very profitable, so much the better. We in Rhode Island are perhaps much less interested in land fisheries than all the other States, yet we have within our borders three or four trout hatcheries. I believe one of the most successful devices for raising trout is being matured there, and that it will prove an eminent success, from what I know of it, in the propagation of trout. The party claims that he can produce more trout from the same number of eggs than by any other process that has been evolved.

Commissioner HUDSON. What is it, — the Hoxie process?

Commissioner SOUTHWICK. Yes, Hoxie. I think, from what I know of his plans, it will prove a success. But the idea of preventing a man from selling what he raises on his own ground, — I don't think the State has any right to interfere. I think I have the right to raise what I please on my own land, and I do not know the right of any law to interpose. I have a right to give away or sell the trout. I do so with everything else.

The CHAIRMAN. You understand that this matter does not prevent the sale of trout. It simply prevents the sale of them during such seasons as the sale is prohibited by law.

Commissioner SOUTHWICK. I understand. Well, if it can be done at certain periods, it can be done during the whole year.

The CHAIRMAN. The question is, how the trout in wild streams can be protected under such a law.

Commissioner SOUTHWICK. I see the point.

Commissioner BRAINARD. I agree perfectly with the gentleman from Rhode Island in regard to protecting home industries, so far as individual interest does not interfere with the public interest. Now, a man, he says, should have the right to buy and sell or raise and sell for his own benefit and own pecuniary advantage. That is true to a certain extent. But this allowing a man to sell his own trout raised in his own private streams or ponds is only opening the bar for a man to come forward, and, under cover of being a raiser of trout, to throw onto the market during the close season our wild trout, and there is no way of detecting them at all. This matter of tagging them is all bosh. As Mr. Hodge says, if the tags are held by any state officer to be distributed, he can represent that he is a trout raiser, and he can get a certain number of such tags; he can go to a wild stream — he may have a little pond of his own at home — he can go to our state waters and take out what trout he pleases. I do not believe in allowing any private individuals to have advantages that are going to be a detriment to the general public.

Commissioner SOUTHWICK. By the Hoxie process I believe they produce more trout than they would otherwise produce in the whole State without it. Inasmuch as they do that, they are public benefactors, and should be encouraged by every means possible. I still believe that we could sell a half more trout than we should by prohibiting the sale of them, or by making the business so unprofitable that it could not be continued.

Commissioner STANLEY. Mr. Chairman, the matter that you speak of in regard to the propagation of trout does not really affect any one in our State (Maine), for there is no one who propagates them for the market. But, if you open your market here in Massachusetts for the sale of trout, there are hundreds in Maine that would smuggle trout through to your market, and I think it would be a great damage. We have taken pains to make our laws so as to protect game and fish in every State in the nation. We do not allow the sale of a prairie chicken in Maine, although there are none there. It is so with all our fish and game. We try to have them protected not only in our own State, but in others as well. It seems to me that if you open this market you will find trout from Maine coming in here for sale. The matter of the wild fish in our streams, — why, the wild fish in our streams are worth ten thousand of the fish that are propagated for market.

There is plenty of open time for the sale of those fish. In February and March trout are not in good condition for sale. I do not think trout fit to eat before May or June. That is the proper time to sell them.

Commissioner HUDSON. This question brings up the whole matter of the *feræ naturæ*. If a man raises chickens, we do not expect to say that he shall not sell those chickens at any time of the year he pleases. If a man has a little spring or a large spring, perhaps holding a certain number of trout which he has put there, raised them exactly as he would so many chickens, from their birth up to four or five pounds in weight,—under such circumstances it seems to me a pretty difficult thing to say that he shall not sell those trout when he wants to. On the other hand, if he has got a stream that runs through a certain lot where the trout are wild, so to speak, then I can conceive how you can control those trout.

Commissioner SOUTHWICK. Chickens are now brought up as an example. Private individuals raise chickens. The public do not. We do not have wild chickens, and there is no necessity for protecting them. A man raises chickens for his own private convenience, but none are raised by the State. The State goes to no expense in regard to the raising of chickens. But the matter of fish affects every citizen in the State; and, if a man is allowed to sell his fish in the market, of course he injures thousands where he benefits one.

Commissioner HUDSON. I didn't happen to be here at the opening of the conference, and so did not hear the resolution read; but, as I infer, it is for the purpose of preventing any man selling trout out of season, whether alive or dead, or any other way.

The CHAIRMAN. The law now is that any person can engage in the artificial cultivation or maintenance of trout, may take them when and how he pleases, but shall not offer them for sale during the time that they are prohibited by law.

Commissioner HUDSON. I see.

The CHAIRMAN. Now, the point that would be likely to be brought up is this; that certain parties representing a very small industry want that law changed so they can sell their trout as they please—in other words, two months earlier in many States. The State is stocking the streams with trout; and the question is, whether the passage of such a law would not be utterly ruinous to the trout fisheries of the State. That is the question.

Commissioner DOWNS. I think there is one other point in reference to what Commissioner Hudson said about a man who has a pond with trout in it. The man who has this pond and has these trout got

them when the law was so he could not sell them. He knew when he bought them that he could not sell them. Now he has reared them, he wants the law changed to fit him. If you let the bars down there, next year he will want the privilege of leasing his premises to Tom, Dick, or Harry, to fish in his waters and take the trout out. You cannot draw the line. If you let the bars down once, you have opened them forever. If another man wants a special law, you will have to give it to him. It is special legislation for the benefit of a very few men.

Commissioner HUDSON. I am most thoroughly in sympathy with all the other gentlemen. It is only a question of methods.

Commissioner DOWNS. It does not affect us in any way, so far as we are concerned. But, if a few other gentlemen come along next year and want a similar privilege, how are you going to refuse them?

Commissioner STILLWELL. A peculiar feature bearing on this case presented itself last year in Maine. A certain company purchased a little island called Petit Menan, and inclosed it with very expensive wire fences. They advertised for live deer, and set every poacher in Maine on the *qui vive* to catch our deer in close time and sell them to this company.

Commissioner HUDSON. Did they advertise for this in close time?

Mr. STILLWELL. Yes. There are three lots staked out in the vicinity of this property of Petit Menan, very desirable places for summer residences, and they supposed they could have deer shooting in close time. But the commissioners were obliged to say to these gentlemen, "if we catch you with a haunch of venison outside of the gates of Petit Menan, we shall arrest you." This same question comes up again, and is always presenting itself where a person has a private pond. You may have a private pond if you please, you may spear your fish, net your fish, kill them with dynamite if you please on your own premises, — it is all your own; but don't you take them outside of your gate; don't you go out into the town that belongs to the State of Maine. If you do, you must submit to the laws of the State of Maine. We are running against such cases all the time. Persons will come upon the borders of the State of Maine in close time, and advertise to give fifty dollars apiece for a live deer. One of the greatest nuisances we labor under is this continuous tempting of our citizens to poach.

Commissioner DOWNS. Does not Mr. Hoxie, of Rhode Island, sell a large proportion of his trout outside of the State?

Commissioner SOUTHWICK. I presume he does.

Commissioner DOWNS. I see he advertises in most of the sports-

men's papers. I have an idea he raises his trout to sell outside of the State.

The CHAIRMAN. It seems to me that, if such a law should be passed by the State of Massachusetts, it would be at variance with the laws of the other New England States, and Massachusetts would become the dumping ground of all the other States for trout, just the same as it is now for game; and, as a result, every one of the States outside of Massachusetts would at all times and all seasons send trout to this market, knowing there was a market for them here, and no law to prevent it.

Commissioner STILLWELL. If you can protect us, gentlemen, in your market here in Massachusetts, it will save us a great deal of annoyance. We protect the Western States by prohibiting the importation of prairie chicken. We do not allow a prairie chicken (pinnated grouse) to be sold in the State of Maine during the close time. We do not allow quail killed in Massachusetts to be sold in Maine. If found, we immediately seize them. There is an inducement for poachers in Maine. Everything that is poached in Maine comes to Boston. As I said, we immediately seize quail shipped from Massachusetts if found in Maine, and prosecute the parties selling them. I do not think it is in your power to stop this thing, but I wish it were.

The CHAIRMAN. We have endeavored to remedy this. This difficulty arises just as my friend from Rhode Island states. A man says, "Why can't we buy game while it is in season, put it in our store-houses and sell it when we please? It is ours, irrespective of the law." These cold store-houses are the difficulty.

Commissioner STILLWELL. It is a hard question to meet.

The CHAIRMAN. It is one of those things which, in my judgment, requires a great deal of thought; and, the bars once let down, is liable to ruin the game laws.

Commissioner HUDSON. A question very much akin to this has just been decided by the supreme court of Connecticut. It was in regard to some porgies sent from Norwich to New York. The law-breakers said they bought the porgies at a time when it was legal to take them; that they were merchandise, like everything else, and that they could send and sell them wherever they pleased. The matter was carried to the supreme court, and the supreme court sustained the law; exactly opposite from the Kansas supreme court, which took another view with regard to prairie chickens (pinnated grouse). The Connecticut court said that as long as the State unquestionably had control of its game, it could control the killing of game, and it could

also control the disposition of game ; and, if the State of Connecticut chose to pass a law that game should not be sent out of the State, it was constitutional and good law.

The CHAIRMAN. I am very glad to hear that, because Massachusetts has passed a law against the transportation of game ; and we should be very glad, Mr. Stillwell, if it were possible, to prevent your poachers finding a market in the State of Massachusetts. We have done what we possibly could to prevent it, and we shall continue to do so as long as we are in office. We sympathize thoroughly with the difficulty you labor under.

Commissioner SOUTHWICK. I would say, Mr. Chairman, that I did not intend to represent the breeders of trout when I spoke in regard to trout. I spoke upon general principles. I have never discussed this question at all with the breeders of trout, and I do not know their mind about it. I do not know whether they want to sell them during that time or not.

The CHAIRMAN. Is there anything further to be said on that subject ? Now, gentlemen, before we go any further, in order that I may not forget it, I would like to suggest to the commissioners of the New England States who are present here, that we have an annual meeting, for the purpose of discussing questions pertaining to fish and game. We should be very glad to coöperate with you, gentlemen, if you so desire ; and I think much benefit might be derived from such intercourse.

Commissioner HUDSON. I have been on the Connecticut commission a great many years. One of the pleasantest duties we have performed has been our annual gathering here at the state house ; and I think the commissioners generally made it a point, if possible, to be here. It was not only very agreeable, but it was also instructive, and for the best interests of the several States. The State of Connecticut, when it appointed its fish commissioners, especially provided that, among other duties they should consult with the commissioners of other States.

The CHAIRMAN. That was the case in regard to Massachusetts.

Commissioner HODGE. It is also the case in New Hampshire.

The CHAIRMAN. As far as my judgment goes, I think no part of the duties are more profitable than an interchange of ideas. If there is no other subject which you desire to discuss, I should like to refer to the subject of lobsters. I understand that there are members present from States where no lobsters are propagated ; but it is an important industry in Maine, New Hampshire, and I suppose somewhat in Rhode Island.

Commissioner HUDSON. Yes, and Connecticut, too. If you will excuse me a moment, I would like to say that one of the provisions in our statutes says, "The governor shall appoint two persons to be shell-fish commissioners, who shall confer with the fish commissioners of the New England States." That is the reason I came here.

Commissioner HODGE. I move that we have an annual meeting, wherever it may be most convenient to the commissioners, for the purpose of talking over matters of interest to our different States in regard to the cultivation, propagation, and protection of our fish and game.

Commissioner HUDSON. I would suggest to those who met here years ago, and recollect how exceedingly interesting it was to have Mr. Atkins here — formerly fish commissioner of Maine, a practical fish breeder, and one of the most intelligent and successful breeders — that he be included.

A motion to this effect prevailed unanimously.

The CHAIRMAN. Now, gentlemen, where shall the meeting be called?

It was unanimously voted that the annual meetings be called, until further action, in the city of Boston, at the state house, at such time as the chairman may decide on, and that the meetings be called by the chairman of the Massachusetts commission. At the suggestion of Chairman Brackett, it was also voted that he be given authority to invite ex-commissioners and such persons in New England as are interested in fish and game protection, and all persons who would be likely to impart information to the meeting.

LOBSTERS.

The CHAIRMAN. I have brought up the question of lobsters. I am well aware, Mr. Stillwell, that our State has become the dumping ground, to a considerable extent, for illegal lobsters from your State. We are doing all we can to prevent it. The law of Massachusetts, as it now stands, forbids the taking or possession of any lobster less than ten and one half inches in length. It also prohibits, the year round, the possession of any egg-bearing lobster, under a fine of from ten dollars to one hundred dollars, or three months' imprisonment. The result of that law has been very remarkable. It has been in force only two years, but our shores are swarming with small lobsters. We have a system of patrols from one end of the coast to the other, stopping the carrying of lobsters to New London, New York, and other places where they have been smuggled. We have this year planted upon the coast one hundred and thirty-eight million lobster

eggs. Certain parties have resorted to every possible means to evade the law. The last trick devised to evade the law was to put into cars — which fishermen are obliged to have marked — saleable market lobsters. You go to the cars and look around, and everything is apparently all right. But you look around still further, and some distance off you will see a little chip floating on the water. If you watch it you will find that it doesn't move much. If you take hold of the chip, you will find a string attached to it. If you pull up the string, you will find at the end of it a car with from one hundred to one hundred and fifty egg-bearing lobsters, as well as short lobsters. We captured fourteen thousand seven hundred such lobsters in three weeks, for which no owners could be found. Smacks would come on from New York, would load with marketable lobsters, and just at night these cars attached to the chip would be pulled up and taken aboard. We have broken up the traffic of all the smacks except one. There is one that runs to No Man's Land, which is very difficult to break up, for this reason: it is out at sea and with a perfect bird's-eye view all around, a smack would come up there and load with marketable lobsters, wait until everything was clear, hustle on the others, start, and get three miles out from the shore before we could reach them with a steamer. We shall, however, do something to stop this. In regard to the illegal lobsters that were sold here, we have nearly broken up the sale. Perhaps no law in Massachusetts is at present more thoroughly enforced than the lobster law. Lobsters pass through your State (Maine) through this State in transportation. There are any quantity of short lobsters in barrels that are in transit through the State that we cannot touch.*

Commissioner STILLWELL. I regret that our coast commissioner is not here. He is a very effective and energetic man.

The CHAIRMAN. I judge so, from some things I have heard.

Commissioner STILLWELL. He is doing a fine work. We are fully aware of the assistance that Massachusetts is extending to us. It is hard to fight against New York.

The CHAIRMAN. I will say further that we (Massachusetts) have made between twenty and thirty arrests this summer, and have convicted all but one of the parties.

Commissioner STILLWELL. We fully appreciate all your efforts.

The CHAIRMAN. The jury that we brought one case before was thoroughly in sympathy with the lobster men, and of course we failed

* A recent decision of the Supreme Court makes it as much an offence to have in one's possession short lobsters caught outside of the commonwealth as those caught in the State's waters.

to convict. We have obtained nearly three thousand dollars this year from convictions. We are pursuing this policy at a considerable expense. We are patrolling the coast from one end to the other. I think nothing is more promising at the present time than the question of protecting lobsters. In a few years we will probably see the effects of it. There was an increase of fifty-four thousand dollars last year over the year before, in the value of marketable lobsters.

Commissioner CHALKER. Mr. Chairman, I would like to inquire about your method of propagation. You spoke of planting lobster eggs.

The CHAIRMAN. We hatched lobsters to a considerable extent. It is very simple and easy to do it by putting them into boxes. We have found, however, that it is just as easy to take those lobsters, plant them in depleted waters with the eggs on them, and hatch them in that way. We have a close season on egg-bearing lobsters at all times of the year. I will state another thing which may be interesting. Lobster spawn or eggs are found upon lobsters more or less during the whole year. We have proved beyond a question of doubt that, no matter at what time of the year the eggs are deposited, they do not hatch until the water reaches a temperature of fifty-five degrees. In other words, if the lobster deposits its eggs in December or November, it carries them into the spring, until the temperature of the water rises. In these experiments of which I speak, we caught egg-bearing lobsters, put them into cars, kept them, took the eggs from them every week, and watched the development with a microscope; when the water reached fifty degrees you could see a rapid development, and at fifty-five degrees they burst their shells and were gone.

At 12.30 a recess was taken, while the commissioners called on Governor Russell. Returning to room A, a conference was resumed.

The CHAIRMAN. Informally, as a matter of interchanging ideas, we will discuss the game laws. I should be glad to hear from Mr. Stillwell in regard to the game laws of Maine.

GAME LAWS.

Commissioner STILLWELL. I do not know that I have anything to say, unless you wish to discuss some changes or proposed changes, or do something of the kind. As commissioners of Maine we are impressed with the wonderful success of our game laws, from the small

protection we have been enabled to extend in the propagation of deer. The rapid increase of deer in Maine is a matter almost of astonishment. Our laws do not allow us to extend much in the way of propagation of deer. Yet the deer are everywhere, particularly in the vicinity of the largely inhabited towns. It is but three or four weeks ago since a deer was caught in the city of Bangor. It was headed off on the bridge, jumped over the bridge, was pursued in a boat, and brought into the boat alive. It was taken out of town in an express wagon at night, and carefully turned loose again. So it is throughout the State. It really is encouraging. It seems to me that in the State of Massachusetts you have forests enough now to cultivate the deer.

The CHAIRMAN. Yes; we have a few deer on the Cape now.

Commissioner STILLWELL. There used to be a place up near Wachusett and one in the vicinity of Danvers, which would be admirable places for this work. Deer are very easily bred. It is difficult to drive them away. People are complaining that the deer are beginning to trespass on their garden patches. They are almost domesticated.

The CHAIRMAN. I would say, Mr. Stillwell, that there are a few deer left in Massachusetts, down on the Cape. The State prohibits the killing of them. But there are two laws on the Cape: one is the law of the legislature, which forbids any one killing them; the other is the unwritten law, which allows the natives to kill them and keeps everybody else from killing them.

Commissioner STILLWELL. Our greatest obstacle is the dog. If we can prevent the dogging of deer, it will be an excellent thing. It is a very difficult thing to do, however. We have more fighting on the subject of hunting deer with dogs than almost any other one thing, and it causes us much trouble. But you cannot preserve the deer if you permit dogging. There is no compromise at all there. The deer, even when pursued by the smallest cur, will run to a man for protection. When snow is on the ground, deer will run up to you, crowd against you, and push you over in perfect terror, when pursued by dogs. A great destruction of deer takes place in Maine. Poachers go out in the deep snow armed with nothing but a butcher knife and a cur dog, and they can go up to the poor, bleeding, terror-stricken creature, wade up to it on snow shoes, and cut its throat. I think deer could be bred in Massachusetts without the least difficulty, particularly in the vicinity of Wachusett. The extirmination of the moose in Maine seems possible. A low type of men have come to Maine, calling themselves "sportsmen." A short time ago a Boston man came

upon some cow moose with two calves. There was a bull moose in the group. It was with great difficulty that the Boston man could be prevented from shooting a cow moose. The case was all the more aggravating because the hunter had already killed a magnificent old bull, which was all that the law allowed him to do. Well, now, gentlemen, that is too frequent a type of the so called "sportsmen" who come to our woods. It would seem to me that an ordinary human being would not shoot an old cow moose, and yet it would have been done in this case. A very prominent sportsman, three years ago, was fined for shooting a cow moose with her calves by her side. The meat was worthless. He merely took off enough for one meal. We caught him fairly, and fined him one hundred dollars; but that fine was not in proportion to the offence. The low type of sportsman is illustrated by the man who catches a salmon on the fly, and then goes and sells it; yet we have such men. I have seen such men in Bangor, catching salmon with a fly, then taking it down to the Bangor market and selling it for one dollar per pound.

The CHAIRMAN. Mr. Hodge, how is it in New Hampshire about deer?

Commissioner HODGE. I am happy to say that, as far as our State is concerned, we have made the thing the success that my friend, Mr. Stillwell has related in regard to Maine. With the little protection that we have been able to extend to our deer and moose, they have increased far beyond our expectations. I can also say that within the city limits of Manchester a wild deer was shot down this very fall. It is not an uncommon thing to see them far out from the unbroken woods scattered all over our State. In regard to the dogging of deer, while unfortunately our State allows the use of dogs for a limited period, we have so far met with no serious trouble from them. I should be glad if it were entirely stopped. The greatest evil that I see from running deer with dogs is this—the majority of the deer killed are does. The buck, conscious of his strength, throws up his head and away he goes, and leads the dogs a wild-goose chase. The doe, being more timid, takes to the first water it can reach. Eleven deer were killed in one pond I know of, and they were all does. I do not imagine hounding drives deer away from their haunts to any great extent, because I have taken particular pains to question parties who have been acting as guides for the last few years. They all tell me that they will start a buck from a certain pond, the dogs will run him from that pond, and they can go out the next day and start him from the same place. Last winter deer were as thick as rabbits in our woods. This fall sportsmen report to me that the

woods are full of deer, and they never imagined there were so many. One of our detectives told me last spring that there was one yard upon the Dead Diamond, extending for some five miles, that was literally full of deer, and in traveling from one place to another on his beats he had to take a circuit around these large yards, to prevent going in and disturbing the deer. I asked him how many deer he thought he could kill without any gun. He said, "I can take my knife and go in there and kill fifty deer a day without any trouble." One of the guides there said the deer were so tame that they would come into his yard, and he fed them with gingerbread out of his hand. That simply shows how quickly they learn their friends, and know whom to avoid. Moose are on the increase in our State. There have been a great many more moose seen by the fishermen this past season than for many years before. I am happy to say that the time has gone past when sportsmen will come into our State and murder moose as formerly. Two or three years ago a well known New York party came to New Hampshire and killed three moose in one month in the close season, using what little meat he could in his own camp; the rest was sunk in the lakes. That man has not been back to New Hampshire since, and it will be well for him that he does not come.

Commissioner STILLWELL. Are not those moose being driven away? Are not the surveys for the new railroads doing it? In our State they have driven the moose out of their old fastnesses, and they go trooping over the State. The other day I heard of four being seen in one group quite near a populous city. Is it really an increase of moose? Are they not old moose that have been driven out of their fastnesses?

Commissioner HODGE. I cannot tell where they came from.

Commissioner STILLWELL. One of the eminent sportsmen of this State killed a famous moose some years ago, but he told me it cost him one hundred dollars. Now, close to the place where he hunted that moose, a cook from one of the camps went out this season and shot a monstrous old bull moose. And so it is. They seem to be trooping, frightened, all over the State. I am inclined to think it is the new railroads that are driving them out.

Commissioner HODGE. You don't consider such causes destroy your deer?

Commissioner STILLWELL. No, sir. The destroyers of deer in our State are the hunters on the water. These fellows simply lie on the surface of the lake in their canoes. They turn the dogs loose, and the deer rush for the water. They know perfectly well that the scent is lost the moment they strike the water. These lakes are slaughter-

houses. You can kill every deer there is by sitting in a canoe on any of our lakes. The dogs will drive the deer into the water. Our State is dimpled with lakes. You cannot go ten miles in any direction without coming upon a sheet of water. There is where these fellows slaughter deer.

Commissioner HODGE. I was in your State last year, and camped on a little pond. There was no time from daylight to dark but that I could look out and count from one to twenty wild deer feeding by that pond.

Commissioner STILLWELL. The moose are very plenty in the State of Maine, but I question whether we have a right to rate them as a part of our game. They are merely driven in there, frightened in, emigrating from New Brunswick.

Commissioner HODGE. But you have large tracts of forest entirely clear from the railways. Why don't they take up their permanent abode there?

Commissioner STILLWELL. We had, sir, in the Dead River section and the head waters of the Kennebec, but now the railroad surveys are going through these; they are everywhere, and the railroads carry the sportsmen where they never went before. There are large camps there, supported at great expense by wealthy men. We don't object to them. Your true sportsman would scorn to shoot a doe.

The CHAIRMAN. You are aware, I suppose, Mr. Stillwell, that there is in some States a law that prohibits shooting a doe or a fawn at any season of the year.

Commissioner STILLWELL. They shoot them in our State. We had a man up the other day on a technical question, but had to let him go. He said, "I shot the doe, sir, and there were two fawns." I said, "Two young ones?" "Yes," he said. "But were they wounded?" "Oh, yes; they were wounded." "But a young fawn usually goes with the old one?" "Sometimes after it is wounded." "Why did you shoot them?" "I had to; they were around there, and when I dropped the old doe they would not leave." "Couldn't you drive them away?" "Oh, yes; but they usually stand there half stupefied, looking at the mother on the ground." "You need not have shot them." "Well, sir, I shot them." And he did. The biggest one weighed seventy-five pounds or less. Such men will shoot anything. I suppose one must call them men. Our woods are literally crowded with game. The difficulty is to prevent its all being shipped away. We cannot get a law forbidding the exportation of game. We have a law that allows a sportsman, when he has killed his legal number of deer, to take them to his own home.

Commissioner HODGE. Isn't that right?

Commissioner STILLWELL. Yes, sir; and we try to make it right. We appeal to the spirit of the man, if he has any, and we say: "Mark your name legibly on a card, tie it on your game and go with it, take it to your own home." Well, he takes it, goes to Boston and sells it.

Commissioner HODGE. Paying the expenses of his trip, as I saw reported in a sporting paper the other day.

Commissioner STILLWELL. Yes. Men will do it. It is so with salmon. Men will kill their salmon legitimately, and then sell them

BLACK BASS.

Commissioner HODGE. Mr. Chairman, although we have passed from the subject of fish, there is one fish that we consider of a good deal of importance in our State that was not mentioned, and that is, black bass. They spawn at about the same season, and are in season for capture at the same time almost universally throughout the New England States. In looking at the laws of the different States, I find considerable difference in the time of capture of this fish. We regard black bass as one of the most important fish we have. Previous to the introduction of that fish into our State, during the midsummer we had but little to offer that would induce sportsmen to travel any considerable distance. All we could offer them was a little pickerel fishing, or perch, or hornpout, or something of that kind, unless they went way to a mountain pond, where they would get a few trout. But the black bass comes in the right time, when our State is crowded with summer visitors. The bass is in his prime then. I am bound to say that there is no fish affords any better sport in the long run than black bass, except the land-locked salmon. He is fight from the word go. As a table fish, properly taken care of, he is a most excellent fish, there is no doubt of that. I know people — perhaps some of you, gentlemen — may differ from me in regard to that. But let any person properly take care of this fish when first caught, and it can be cooked in almost any way, and is a palatable fish, either boiled, baked, fried, or put on the gridiron on the coals. I, for one, should be glad to see an effort made in the different legislatures looking to a uniform law in regard to the open season for this fish.

Commissioner BRAINARD. What is your season?

Commissioner HODGE. Our season opens the fifteenth day of June. That may be considered a little early by some, but we have found it to work satisfactorily. June is almost the only month in

which sport can be had with a fly for black bass. During most of that time it will take a fly as readily as a trout.

The CHAIRMAN. The Massachusetts law is July 1 to December 1. Commissioner STILLWELL. We do not protect the black bass. We protect the white perch. Our citizens have clamored for black bass. I got one order from the country, saying, "Send us some black bass eggs by return mail." I could not fill that order. Another man back in the country said he must have some black bass for his pond. He nagged us almost to death. Finally we supplied him. It was two years ago. I met the man afterwards, and he said, "Mr. Stillwell, can't you give us some land-locked salmon?" "Why, sir, you have been nagging us for black bass." "I know it, sir," said he; "but we do not like them, and the pond is full of them." "What do you want me to do?" I asked. "Well, sir," said he, "we want some land-locked salmon." "Haven't you got black bass enough?" said I. "Yes, sir," was the answer; "but we don't like them. Can't you take them out?" "No," said I, "being a commissioner, I had rather not take the contract." There is a general anathema about black bass in our State.

The CHAIRMAN. That was the case in our State, but there is a change now.

Commissioner STILLWELL. I can show you any quantity of black bass in the vicinity of Bangor. People come from New York during the summer, fishing for black bass; but our people won't touch them. I have never seen a finer show of black bass than our waters yield. It is a glorious fish if properly treated. A fish that is drawn out and allowed to die in the sun isn't good eating, not even trout or salmon. But you skin a bass, take out the backbone, put a little salt on it, put it in the cellar, and broil it the next day, — why, black bass is fit for a king, provided that king is a decent Republican or Democrat, I don't care which. But it is a glorious fish and glorious food when properly cooked and treated.

Commissioner HODGE. You are right.

The CHAIRMAN. Your own opinion is that bass has become a source of revenue to your State?

Commissioner STILLWELL. Yes, sir. It is a good fish if it is treated with common sense. I never cared for carp. It isn't a fish that you can take out of the water, put into the frying-pan and eat.

Commissioner DOWNS. I fully concur in what Messrs. Stillwell and Hodge have said about black bass. I think it is the king of all game fish for its size. There is no table fish that excels it, if properly taken care of. Break their necks when you catch them, cover them in the shade, keep them there during the day, take them

out the next morning, and the black bass is a dish fit for a king or anybody else.

The CHAIRMAN. Not only is the black bass a fish that will thrive more abundantly than almost any other fish that you put into the water, but they are splendid for sportsmen. There is no better sport in the world than taking them with a fly. If properly kept and cooked, they are as good a fish as anybody wishes to eat. We have had to fight against prejudice here in Massachusetts. Let me say a word here in regard to carp. They are warm water fish, and thrive best in warm and muddy water, where they grow very rapidly. They are vegetable feeders. Of course it costs nothing to raise them. If you take a carp out of a pond a couple of weeks before you want to use it, put it into cold spring water and keep it, and then take it for table use, you have got a good fish, without any dressing cooked with it. But take it out of the pond and put it right on the table, as most people do, and I cannot conceive how anybody can eat it. I have tried them both ways, and have studied them very carefully.

Commissioner STILLWELL. Just remember what Mr. Brackett has said. That is exactly what the country people do with the carp. It has to be taken out of that muddy, filthy water, put into a box made of slats and kept in running water for a week or ten days. A fish will take the flavor of any water it is in. I once had the misfortune to try a salmon that was captured in the Penobscot. I was catching some with a fly. This fish was hooked in the belly, badly torn, and they said, "kill him." We had him cooked for the next day's dinner. When the next day came every one was on the *qui vive* for that salmon; and at the first mouthful every knife and fork dropped. It tasted like bog mud. Almost any fish will take the flavor of the mud. The catfish, or humble hornpout, next to the trout, is the best fish there is. He is caught and kept in cold ice-water for a number of days at the hotels where they make a specialty of that luxury. You treat the black bass in that way, and it is an improvement even upon the possibilities of the carp.

Commissioner HODGE. Then every man has got to have a little stream on his own grounds, if he is going to eat carp, hasn't he?

The CHAIRMAN. No, you can put them into well water or rain water. Many years ago I ponded some shad for the purpose of saving them to get the spawn. Mr. Theodore Lyman, who was then on the commission, was out to look at the fish, and we gave him a couple to take home. The water we had put them into was soft rain water, and muddy, and he could not eat them. In twenty-four hours the flavor of those shad was so changed as to make them worthless.

Commissioner STILLWELL. That is so.

The CHAIRMAN. It is very important, in the matter of fish, to place them for a few hours or days in water that is of the purest character if you want a good flavor to them.

Commissioner DOWNS. There is no fish that will go ahead of black bass, in my opinion.

The CHAIRMAN. Mr. Hodge will state to you some things which may be interesting.

Commissioner HODGE. I would not recommend or advise any commissioner or any party to introduce black bass into small trout ponds, because in such cases there is only a limited amount of food there, and the smaller and weaker fish would go to the wall. But in our large lakes, like our Sunapee lake, in New Hampshire, we can raise them with trout and salmon, the three together, and they don't interfere with each other.

Commissioner BRAINARD. I have tried it, and I know it is so.

Commissioner HODGE. One of the elements that has led to our success at Sunapee lake was the introduction of black bass. Previous to that time that lake was not known or noted as a trout lake, not even by the local fishermen. A few trout used to be caught every year. During the breeding season, when they came up from the deep water, local parties used to secure a great many trout. At that time the lake was infested with swarms of yellow perch. I am very glad to say that the black bass have destroyed those fish, which I consider the worst enemy to trout or salmon that swims. Immediately following the disappearance of the perch there has come a marked increase in the trout of both kinds. I say both kinds, because we have in that lake a fish which has only been known to scientists within the last few years, now known as the aureolus, or golden trout. They are essentially a lake trout. They do not enter the streams for the purpose of propagation, but they spawn in the lake; and there has been a very marked increase in this case, as well as of brook trout. Of course I attribute a part of that increase to the work we have done at our branch hatchery; but it would have been impossible for us to have achieved the measure of success that we have, had it not been for the destruction of the yellow perch in the lake. I also know, from friends of mine in Ontario, that there are lakes there in which you can cast for your bass in June, taking a trout at one cast and a bass at another, the same as you can in Sunapee to-day. I have known black bass for many years, have taken great pains to ascertain the food on which they live, and I never yet, from any of our

lakes where trout exists, found a trout or a salmon in the maw of a black bass.

Commissioner DOWNS. You are speaking of the small-mouthed black bass?

Commissioner HODGE. I am.

Commissioner CHALKER. Within the last few years in Connecticut there has been a crusade against the black bass. At the farmers' clubs and in the farming community one of the principal things discussed is how to get rid of the black bass in small ponds and lakes. They tell some very different stories. We sent one man some two hundred to put into a little lake that was stocked with pickerel. He subsequently came before the commission and wanted to know how he could get rid of them. He said he wanted the restrictive laws taken off of that pond by the State, for when we put the black bass in he had a nice lot of pickerel there, but now the pickerel had all gone.

Commissioner DOWNS. That is one of the best arguments for it. It shows that people go and catch them if they can find out where they are.

Commissioner CHALKER. This year we have one application for black bass, which we are intending to fill. The Housatonic Water Power Company put in a very large quantity a few years ago, and they had become a very desirable fish in that locality. Since the dam broke away, last March, we have had an application to stock that stream with black bass, which we are intending to do; but that is the only application we have had for black bass for eight years.

The CHAIRMAN. It is a far better fish than the perch. I prophesy that the time will come when it will be one of the most popular fish that we have. I stocked one pond with black bass here, and the parties who were interested in it wanted to know what it meant. They said they couldn't catch any black bass. I sent a man there who was experienced in catching black bass, and he found the trouble in an hour, and showed the people how to catch them. Red perch is one of the best baits for black bass, but the bass will destroy the perch. I don't know any fish in our waters that is more destructive to the trout or other fish than this little red perch. I do not know of a meaner fish.

Commissioner STILLWELL. The yellow or red perch is a very destructive fish.

Commissioner HODGE. One man said to me, "Down in our town they (black bass) destroy the hornpout;" and he thought they ought to be exterminated on that account.

Commissioner DOWNS. When I was a boy I lived upon the Housatonic river, and I used to go out and catch twenty-five or thirty yellow perch from it. To-day I couldn't catch one there. That is due to the fact that we introduced the black bass.

Commissioner HODGE. Has it been a great loss?

Commissioner DOWNS. I think it has been a great improvement, and so does everybody else. I had rather go fishing for bass. Take it in the summer time, when the factories are shut down, and the river is lined with people fishing for bass.

Commissioner STANLEY. Speaking of bass, we have several ponds in our State into which bass have been put. In every case when the bass was first put in there were no trout. Now, within a few years, they have been catching trout. These ponds that I speak of had the yellow perch in them. It is the worst fish there is. I agree with you perfectly on that point. The bass have cleaned the perch out, and the trout are coming back. In our State we have no protection for bass; but still, at the same time, if they are not caught and sold for market we do not really need any. We have splendid fishing for bass, and there is no close time on them. We catch them at all seasons. There is plenty of bass in all our ponds that I know of.

The CHAIRMAN. As a matter of sanitary regulation, if nothing more, don't you think that all fish should be protected during the breeding season?

Commissioner STANLEY. Yes, I think so; but there isn't so much harm in not protecting black bass. I do not think you could pass such a law in our State.

The CHAIRMAN. I do not think a fish is fit to eat during the breeding season.

Commissioner STANLEY. They are not. I do not think they are fit to eat before July.

Commissioner DOWNS. From May 1 to June 11 is our close season on black bass.

Commissioner HODGE. In New Hampshire we not only have a close season but a size limit of eight inches.

Commissioner ATHERTON. We will raise you two inches. Up in Vermont the size limit is ten inches.

Commissioner DOWNS. The black bass is certainly a very delightful fish to catch.

The CHAIRMAN. I think no man who is a sportsman can have any question about that.

Commissioner HODGE. Has there been any effort to introduce striped bass into our fresh waters?

The CHAIRMAN. I can answer that question. Mr. Tisdale, of Wareham, put some striped bass into what was called Flagg's pond. Two or three years ago an immense fish was found there, that weighed, I cannot say just how much, but some fifty or sixty pounds, and I don't know but more; and it was a striped bass. They spawn in fresh water. They were formerly abundant in the Merrimack.

Commissioner STILLWELL. They are almost extinct in our rivers; we used to catch them in the Penobscot almost every year, but it is very rarely that we catch them now.

The CHAIRMAN. I once visited a tide-water gate in your State (Maine) where a school of striped bass had run in when the gates were open. The gates were shut, and the fish were frantic to get out. There were some seventy-five or one hundred of them, I should think. There were striped bass in there that would weigh sixty pounds.

Commissioner DOWNS. The New York Commission are talking of stocking Saranac with black bass.

Commissioner CHALKER. This last year in Long Island Sound there has been an unusual quantity of small striped bass taken, and this fall upon Montauk Point they were catching them by the ton, — a thing that has not been done before for some six or seven years.

Commissioner DOWNS. They are fine game fish to catch with the hook and line.

Commissioner SOUTHWICK. They are not much more plenty this year than last with us.

Commissioner CHALKER. They are plenty with us.

The CHAIRMAN. The destruction of striped bass has been brought about by gill nets and purse seines in the tidal waters with us.

Commissioner HODGE. Are they destructive fish to others?

Commissioner CHALKER. They are very destructive fish.

Commissioner STILLWELL. We have a plentiful stock of good pond fish now in Maine. I do not know that we have anything more to wish for. I am one of the few having a high esteem for the black bass; but the people of Maine are down on them.

Commissioner HODGE. They will get over that.

The CHAIRMAN. That will pass away.

Commissioner STILLWELL. When you try to catch a black bass, you have got an honest and square fight with him.

Commissioner DOWNS. He never gives up, either.

Commissioner STILLWELL. It takes a good fisherman and makes a good fisherman to catch black bass. There is no better angler than your experienced black bass fisherman.

It was the sense of the conference, that, owing to the wide difference in climate in the New England States, uniform laws would not prove satisfactory to all concerned.

Adjourned, to be called together at the discretion of the chairman of the Massachusetts Commission.

FROM MASSACHUSETTS FISH AND GAME REPORT, 1891.

REPORT ON THE LOBSTER.

BY S. GARMAN.

MUSEUM OF COMPARATIVE ZOÖLOGY,

CAMBRIDGE, MASS., Dec. 17, 1891.

Hon. E. A. Brackett, Massachusetts State Fishery Commissioner:

SIR, — Yours, with inquiries regarding the conclusions reached in the study of the lobster, is at hand. While unavoidable delay in the drawings prevents placing the complete matter in your hands, it is quite possible to give you in a few words a general idea of the results and their bearings, such as will no doubt sufficiently answer your questions.

According to the arrangements made, some of the eggs from berried lobsters kept for the purpose were sent me at regular intervals through an entire year. These eggs were at once examined to note their progress in development, and they were then preserved by various methods for future studies and comparisons. After their young were hatched the females themselves were dissected, to observe the condition of the ovaries, and to determine the time when another lot of eggs might have been expected from them. As our work began in midwinter, it was necessary to follow certain specimens up to the hatching, and then to take others to complete the series from the laying. Eggs supplied me as freshly laid were so far advanced as to indicate that fertilization had taken place before they were placed under the tail of the lobster bearing them. The time and process of fertilization has not been discovered; but in all likelihood the marine lobster does not differ greatly in these respects from its freshwater relatives, the crayfishes. In the case of the latter the male seeks the female some time before the eggs are laid, and deposits the fertilizing matter on the under side of her body, near the external

openings of the oviducts, where it adheres for a time as a whitish mass. How the fertilizing elements, the spermatozoa, come into contact with the eggs and enter them, has not yet been observed. The development of the embryo in eggs laid on the seventh or eighth of August was so rapid that on the third of September the eyes were visible as thin crescent-shaped spots. As the waters grew colder the progress was retarded, until the changes were very slight indeed. This condition was maintained throughout the winter, and it was only when the summer temperature was reached that rapidity of advancement was again to be noted. The young began to hatch on the fourteenth of July; all of the eggs on a female seeming to be about equally advanced, the entire brood emerged at very nearly the same time. Examination of the ovaries, after their young had left, showed that the females would not have laid eggs again for a year; that is, not before the summer next following that in which they had hatched a brood. In other words, the dissections proved that the lobster lays only once in two years, hatching a brood one summer and laying eggs the next following summer for another brood. The time required in the development of the embryo is so long as to preclude hatching the eggs under ordinary circumstances during the summer in which they are laid. Artificial conditions might readily be brought about, by heating the water in which specimens are kept, which would hasten the progress and greatly shorten the period between laying and hatching; but normally the winter temperature induces an almost complete suspension of advancement.

By the small number of specimens kept, it was not possible to fix the lengths of either the laying or the hatching periods. This, however, may be approximately done in connection with observations made by the United States Fish Commission. It must be borne in mind, in this connection, that the seasons south of Cape Cod begin earlier and last longer than in Massachusetts Bay, and that farther north they will be still more contracted. Variation must also be expected in different years, as the seasons are earlier or later, and in different localities, as the waters are warmer or colder. Though the bulk of the laying or of the hatching in any particular year occurs within periods of two or three weeks, probably four fifths of either is finished in less than a fortnight; to make allowance for the early years and for the late ones, and to include the early and the belated individuals, it becomes necessary to considerably extend the general periods.

From all that has been gathered we may summarize as follows: (1) the female lobster lays eggs but once in two years, the layings

being two years apart; (2) the normal time of laying is when the water has reached its summer temperature, varying in different seasons and places, the period extending from about the middle of June till about the first of September; and (3) the eggs do not hatch before the summer following that in which they were laid, the time of hatching varying with the temperature, and the period extending from about the middle of May till about the first of August.

I have the honor to be, very respectfully, yours,

S. GARMAN.

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I. I. O'Connor, chief clerk.
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